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THE
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OF THE
MEDICAL SCIENCES.

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- EDITOR**—**ISAAC HAYS**, M. D., *one of the Surgeons to Wills' Hospital for the Blind and Lane, &c.*

TO READERS AND CORRESPONDENTS.

Our readers will perceive, from the present Number, that several changes, and we trust improvements, have been made in this Journal. The most important of these is the introduction of a new department—that of Monographs. In this department it is intended to insert a series of elaborate articles, of a similar character to those in the American Cyclopædia of Practical Medicine and Surgery; the publication of which, it is hoped, will lessen the regret generally expressed at the suspension of that work. A select Bibliography will in future be appended to each of these articles.

Among the minor improvements may be mentioned an enlargement of the page, and a more distinct type.

This Journal originated under the influence of physicians belonging to different states, and most of the Medical Schools of the Union, and has been exclusively devoted to the honour and advancement of professional reputation and usefulness, unshackled by sectional, personal or party feelings. The object of its institution was to form a great *National Work*, one which should conduce to the improvement and elevation of the profession at home, and tend to render it better known and more respected abroad. The complimentary manner in which this Journal has been everywhere received, and the frequency with which it is quoted by foreign writers—the extensive patronage accorded to it—the respectability and number of the contributors to its pages, comprising a large portion of the most distinguished men in the various portions of the union, and professors in different schools—above all, the great extension and advancement of medical literature amongst us since its commencement, would seem to justify the conclusion that the objects of the Journal have not been wholly unattained.

Encouraged by this belief, and under the guidance of the same catholic and elevated views of duty by which he has hitherto been actuated, the editor (the original projector of this Journal) will undeviatingly continue the course thus far pursued. With renewed ardour in the cause—the advantage of eleven years experience, and the assistance of his numerous, able, and zealous collaborators, he trusts to be able still further to promote the great interests of the profession, and the cause of truth and science.

The profession *throughout the country* are invited to sustain the work; in its success all who desire the *real* advancement of medical science, and the elevation of professional character, are deeply interested.

Communications have been received from Drs. ANNAN, FLINT, and WALTER.

Dr. ANNAN's report reached us too late for the present number.

To M. CIVIALE our special acknowledgments are due for his complimentary letter, and for the copy with which he has favoured us of his various writings on Lythotripsy. These valuable works we shall take great pleasure in making known to the profession in this country through the medium of a review, at an early period.

The following works have been received:—Rapport sur le Choléra Morbus de Moscou. Par F. C. M. MARKUS, Sect. du Conseil temp. de Med., &c., &c. Moscou, 1832, 4to. (From Dr. Oppenheim.)

Grundriss der Speciellen Semiotik, nach den Quellen bearbeitet. Von Dr.

HEINRICH EMIL SUCKOW, Kreisphysikus in Jauer. Jena, 1838. (From Dr. Oppenheim.)

Ueber den Unterschied Zwischen todtten Naturkräften, Lebenskräften und Seele. Von J. L. C. SCHROEDER VAN DER KOLK, Prof. der Medicin zu Utrecht. (From Dr. Oppenheim.)

The Medical Formulary: being a collection of prescriptions, derived from the writings and practice of many of the most eminent physicians in America and Europe, &c. By BENJAMIN ELLIS, M.D. Fifth edition, with additions. Philadelphia, Carey, Lea & Blanchard, 1838. (From the publishers.)

Human Physiology, illustrated by engravings. By ROBLEY DUNGLISON, M.D., &c., &c. Third edition, with numerous additions and modifications. Philadelphia. Lea & Blanchard. (From the publishers.)

The Surgeon's Practical Guide in Dressing, and in the Methodic Application of Bandages. Illustrated by numerous engravings. By THOMAS CUTLER, M.D. Late staff-surgeon in the Belgian army. Philadelphia: Haswell, Barrington & Haswell, 1838. (From the publishers.)

A Report founded on the Cases of the Typhoid Fever, or the Common Continued Fever of New England, which occurred in the Massachusetts General Hospital, from the opening of that institution, in September, 1831, to the end of 1835; communicated to the Massachusetts Medical Society in June, 1838. By JAMES JACKSON, M.D., late attending physician in that hospital, Boston. Whipple & Damrell, Boston, 1838. (From the publishers.)

Transylvania Catalogue of Medical Graduates, with an appendix, containing a concise history of the school from its rise to the present time. Lexington, 1838. (From the faculty.)

Catalogue of the Officers and Students of the University of Virginia—session of 1837-8. Charlottesville, Va., 1838. (From Professor GRIFFITH.)

Annual Announcement of Jefferson Medical College, for the session of 1838-9. Catalogue of Students and Graduates for the session of 1837-8. Philadelphia, 1838.

A brief Review of Dr. HORNOR's "Necrological Notice" of PHILIP SYNGE PHYSICK, M.D. Philadelphia, 1838. (From the author.)

Report of the Surgical Cases and Operations that occurred in the Massachusetts General Hospital, from May 12, 1837, to May 12, 1838. By GEORGE HAYWARD, M.D., surgeon to the hospital. Boston, 1838, pp. 32, 8vo. (From the author.)

A Discourse on the importance of a knowledge of Anatomy, Physiology, and Hygiene, delivered at the Auburn Female Seminary, May 30, 1838. By F. H. HAMILTON, A.M., M.D. Auburn, 1838. (From the author.)

Medical Education. An address delivered before the Medical Society of Tennessee, at its eighth annual meeting, at Nashville, on the 7th of May, 1838. By LUNSFORD P. YANDELL, M.D. Published at the request of the society. (From the author.)

Lettre a M. le Chevalier Vincent de Kern, Premier Chirurgien de S. M. I. et R. L'Empereur d'Autriche, en Reponse an un écrit ayant pour titre: Reflexions sur la nouvelle Méthode de MM. Civiale et le Roy, pour broyer et extraire les calculs vésicaux. Par LE DOCTEUR CIVIALE. Avec une planche. Paris, 1837. (From the author.)

Lettres sur la Lithotritie or l'art de Broyer la Pierre. Par Le DOCTEUR CIVIALE. Quatrième lettre. Paris, 1836. Cinquième lettre. Paris, 1837. (From the author.)

Quelques Remarques sur la Lithotritie. Par LE DOCTEUR CIVIALE, Membre de l'Academie. [Extrait des Memoires de l'Academie Royale de Médecine.] Paris. (From the author.)

Parallèle des divers moyens de Traiter les Calculeux, contenant l'examen com-

paratif de la Lithetrie et de la Cystotomie, sous le rapport des leurs divers procédés, de leur modes d'application, de leurs avantages ou inconvéniens respectifs. Par LE DOCTEUR CIVIALE. Avec trois planches. Paris, 1836. (From the author.)

Traité de l'affection Calculeuse, ou Recherches sur la formation, les caractères physiques et chimiques, les causes, les signs et les effets pathologiques de la Pierre et de la Gravelle, suivies d'un Essai de Statistique sur cette Maladie, avec cinq planches. Par LE DOCTEUR CIVIALE. Paris, 1838. (From the author.)

C. W. HUFELAND Neue Auswahl kleiner medizinischer Schriften. Erster Band. Berlin, 1834. (From Dr. Oppenheim.)

Dissertatio Medica Inauguralis, de effectibus tumorum uteri fibrosorum et symptomatibus quæ iidem provocant. Auctore J. A. ROEMER. Groningæ, 1836. (From Dr. Oppenheim.)

Dissertatio Medica Inauguralis, de cartilaginum articularium ex morbes mutatione. Auctore L. H. SCHUMER, Jr. Groningæ, 1836. (From Dr. Oppenheim.)

Quatorzième compte rendu annuel de l'hospice de St. Petersbourg pour les Maladies d'yeux. Depuis le 1er Mai, 1837, jusqu'au 1er Mai, 1838. (From Dr. Oppenheim.)

Zur Jubel-feier des Professor emeritus Dr. JOHANN BUSCH, in St. Petersburg, am 26sten Mai, 1838. (From Dr. Oppenheim.)

Human Physiology, for the use of Elementary Schools. By CHARLES A. LEE, M.D., Professor of Materia Medica in the University of the city of New York. New York, 1838. (From the author.)

WILHEIM STOKES, Doctors der Medicin, &c. Abhandlung über die Diagnose und Behandlung der Brust-Krankheiten. Krankheiten der Lunge und Luftröhre. Aus dem Englischen von GERARD VON DEM BUSCH, D.M. und C. &c. Bremen, 1838. (From the translator.)

A Treatise on the Physical and Medical Treatment of Children. By WILLIAM P. DEWEES, M.D., &c. Seventh edition, with corrections. Philadelphia. Lea & Blanchard, 1838. (From the publishers.)

Elements of Physics, or Natural Philosophy, General and Medical. By NEIL ARNOTT, M.D. Fourth American from the fifth English edition—with additions. By ISAAC HAYS, M.D. Philadelphia. Lea & Blanchard, 1838. (From the publishers.)

The British and Foreign Medical Review, and Quarterly Journal of Practical Medicine and Surgery, July, 1838. (In exchange.)

The London Medical Gazette, April, May, June, 1838. (In exchange.)

The Continental and British Medical Review or Monthly Therapeutical Journal. Edited by M. BUREAD RIOFREY, M.D. March to December, 1837. (In exchange.)

The Edinburgh Medical and Surgical Journal, for July, 1838. (In exchange.)

The Medico-Chirurgical Review, July, 1838. (In exchange.)

Zeitschrift für die gesammte Medicin, Hamburg, January to June, 1838. (In exchange.)

Archives Générales de Médecine, August to December, 1837, and January to May, 1838. (In exchange.)

Revue Médicale, April, May, 1838. (In exchange.)

Journal de Médecine et de Chirurgie Pratiques, April, May, 1838. (In exchange.)

Gazette Médicale de Paris, April, May, June, 1838. (In exchange.)

Bulletin Général de Thérapeutique Médicale et Chirurgicale, April, May, 1838. (In exchange.)

Journal des Connaissances Médico-Chirurgicales, May, June, 1838. (In exchange.)

Journal des Connaissances Médicales Pratiques et de Pharmacologie, April, May, 1838. (In exchange.)

Journal de Pharmacie, May, June, 1838. (In exchange.)

Jornal da Sociedade das Sciencias Medicas de Lisboa, January to December, 1836. 12 Numbers. (From Dr. Oppenheim.)

The American Journal of Pharmacy, July, 1838. (In exchange.)

The Boston Medical and Surgical Journal, August, September, and October, 1838. (In exchange.)

The Select Medical Library and Eclectic Journal of Medicine, August, September, October, 1838. (In exchange.)

Southern Medical and Surgical Journal, July, October, 1838. (In exchange.)

The American Medical Library and Intelligencer, from April 9th to October 15, 1838. (In exchange.)

The Louisville Journal of Medicine and Surgery, April, 1838. (In exchange.)

Authors of new medical books, desirous of having them reviewed or noticed in this Journal at the earliest opportunity, are invited to transmit to the *Editor* a copy as soon after publication as convenient, when they will receive prompt attention. Under ordinary circumstances, very considerable delay is caused by the circuitous routes through which they are received.

Papers intended for publication should be sent, *free of expense*, as early after the appearance of the Journal as possible, in order to be in time for the ensuing number. Such communications should be addressed to "LEA & BLANCHARD, Philadelphia, for Isaac Hays, M.D., *Editor of the American Journal of the Medical Sciences.*" All letters on the *business* of the Journal to be addressed exclusively to the publishers.

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XV. Nature and Treatment of Diseases of the Ear. By Dr. William Kramer. Second edition of the author's treatise on chronic deafness, much improved and enlarged. Translated from the German, with the latest improvements of the author since the last German edition. By James Risdon Bennett, M.D., &c., &c. London, Longman & Co., 1837: pp. 307, with two plates. Philadelphia. Thomas, Cowperthwait & Co., 1838: pp. 250.	135
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MEDICAL SCIENCES.

ARTICLE I. *Case of Anomalous Aneurism of the Aorta resulting from effusion of blood between the laminæ composing the middle coat of that vessel.* By C. W. PENNOCK, M. D., Physician to Philadelphia Hospital, Blockley. [With two coloured plates.*]

THE patient who was the subject of the following observations was a black woman, ætat. 75, who entered the Philadelphia Hospital December 20th, 1835. Her health had been uniformly good until eight years previously, when she experienced slight difficulty of breathing, with some beating of the heart which was augmented by ascending heights. During the summer of 1827, whilst using great muscular exertion, (pumping water,) she was seized with sudden and severe pain at the sternum, attended with violent action of the heart, and a sense of suffocation. The pain increased in violence, and after remaining fixed in front of the chest for two weeks became lancinating, extending from the sternum to the back, and was attended by a short cough, but, (the patient says,) without marked fever. The pain continued nearly three months; upon its cessation the increased dyspnœa prevented laborious exertion. The cough and difficulty of breathing remained, varying in intensity at different seasons, being less distressing during the summer, whilst they were aggravated in the winter. The dyspnœa and palpitation were greatly increased after an attack of cholera, in 1833. During the last four years, besides the thoracic affection she has experi-

* It was intended to publish this case in the spring of 1836, but the appointment of Mr. Drayton as one of the scientific corps of the Exploring Expedition has delayed the engraving of the plates.

enced severe uterine pains with bearing down sensations in the pelvic region and occasional suppression of urine. Two years since, discharges of blood from the vagina took place, which have generally recurred at regular intervals of three weeks. The inferior extremities have often swollen from cellular infiltration.

When received into the hospital, she presented the following symptoms: countenance anxious; no pain in the head; intelligence perfect; great debility; position in bed elevated; œdema of the legs and ankles; pulse 90 per minute, full, tense, intermittent; slight muscular movements cause palpitations of the heart; oppression but no pain in the præcordial region. *Chest* is well formed; anteriorly, with the exception of the region of the heart, it is very resonant upon percussion; posteriorly, percussion yields a normal sound. Respiration in front, very feeble; absent over the inferior third of the sternum; posteriorly, normal. Over the region of the heart percussion is dull in a space, the outline of which corresponds to the form of the pericardium, which extends downwards from the cartilage of the third rib the length of sternum, and laterally, on a line drawn through the nipple, from one inch to the right of the middle line of sternum to the margin of left axilla. Impulse of the heart forcible; rythm nearly natural; first sound roughened, having a rasping sound strongly marked opposite the cartilages of the third rib and along the upper third of the sternum; second sound dull, somewhat prolonged.

Abdomen soft, no pain on pressure. Appetite good, food generally rejected some hours after eating; lancinating pain in the pubic region extending to the lumbar vertebra; dyspnœa and oppression greatest at night, when she is obliged to sit upright in bed gasping for breath. (Treatment, venesection, cups over the præcordial region, Pil. pulv. camph. grs. iij, Sulph. Morph. grs. $\frac{1}{2}$ q. b. h., Tr. digitalis gtts. x. t. d., milk diet.) Small portions of blue mass and squills were subsequently given. The patient in two weeks was apparently better—position in bed was more horizontal, the œdema diminished, sleep less disturbed and the nightly asthmatic paroxysms less intense. This melioration was but momentary; in a few days the symptoms recurred with increased violence. The inferior extremities became greatly swollen; orthopnœa was extreme and the patient was obliged to be constantly in a sitting posture. The impulse of the heart was now more strongly felt, the head of the auscultator being forcibly raised when the ear was applied to the chest; the first sound of the heart predominated over the second, but the latter was distinctly audible on the right margin of the sternum. Between the cartilages of the third and fourth ribs the rasping sound was plainly heard, and could be distinguished along the left margin of the sternum synchronous with the first sound of the heart. The distressing thoracic symptoms were attended with agonising pain in the womb, and with discharge of clots of black blood from the vagina. Transient relief was afforded by venesection, topical depletion by cups and leeches, and the

exhibition of camphor and the narcotics. Orthopnœa, however, with the utmost distress from a sense of suffocation became constant after the middle of January, and death took place on the 26th of that month.

Autopsy 36 hours after death. Large frame; moderate emaciation; infiltration of cellular tissue of lower extremities.

Thorax. No adhesion of the lungs to the pleura costalis. Lungs throughout crepitant; vesicles of the upper lobes much dilated, from the size of a pea to that of a hazel nut. The parenchymatous structure throughout of a dark gray almost black colour, resembling melanosis. The bronchia contain viscid dark coloured mucus without odour.

Heart much enlarged, more than double its natural size; right cavities more dilated than those of the left; coagula in both ventricles, especially the right. The parietes of the left ventricle measure seven-eighths of an inch in thickness, those of the right ventricle natural. The semilunar valves of the aorta partially ossified; the mitral valves opaque, thickened, with cartilaginous depositions on the free edges; semilunar valves of the pulmonary arteries and tricuspid valves, natural. *The aorta* is apparently much dilated, and, when cut into, presents the remarkable appearance of being a double vessel. The internal vessel (*f.* Pl. I. Fig. 1) is the aorta proper communicating directly with the heart, and is nearly surrounded by another vessel (*e.* Pl. I. Fig. 1) of much larger diameter, which, commencing opposite the great sinus of Valsalva, accompanies the aorta until it divides into the primitive iliacs and terminates in a *cul de sac*. The aorta communicates with the external vessel by a valvular fissure half an inch in length, with rounded edges, which penetrates through the serous and *partly* through the middle coats, and which is situated half an inch above the semilunar valves. The external vessel has no communication with the heart except by this opening. The innominate, subclavian, and left carotid arteries have each double orifices communicating with the aorta and external vessel. The innominate near its mouth is divided by a septum into two portions; the septum terminates in a semilunar edge half an inch above the aorta. In the left carotid the appearance of double vessels is presented for the space of two inches; each has separate openings, one communicating with the aorta, the other with the external vessel. In the left subclavian, on the contrary, there is no double vessel; the orifices opening into the aorta and external vessel being merely formed by a valvular septum at the mouth of the artery.* The intercostals of the right side of the thorax communicate with the aorta, whilst those on the left open into the external vessel.† The cœliac, superior and inferior mesenterics, renal, and other arteries given off in the abdomen above

* The ductus arteriosus had evidently opened directly into the aorta.

† This specimen of morbid anatomy was presented to the College of Physicians, at their meeting of February 1836, and is now deposited in the Wistar Museum of the University of Pennsylvania.

the bifurcation into the primitive iliacs, communicate with the aorta. The aorta is perforated by numerous foramina, by which, communication is established between it and the external vessel. Anteriorly the external vessel is composed of three coats; an outer, (3. 3. 3. 3. Pl. II. Fig. 2.) which is cellular; a middle, (2. 2. 2.) formed of muscular circular fibres, and an internal, (1. 1. 1. 1.) which resembles the serous tissues, but is of variable thickness and presents various colours in different parts of its extent. The cellular coat and the lamina of muscular fibres are continued around the posterior semi-circumference of the aorta, where the muscular circular fibres uniting with the yellow elastic tissue (4. 4. 4.) of that artery form in that portion of it its middle coat. The internal membrane of the external vessel, on the contrary, is reflected upon the anterior semi-circumference of the aorta, and the two vessels are there firmly connected by tendinous bands (s. s. s. s.) resembling chordæ tendineæ, which pass from one vessel to the other. These bands being cut, the lining membrane may be readily dissected up; it is of a dull white color, semi-transparent, and evidently takes its red and yellow appearance from the subjacent red fibres of the external coat and from the elastic tissue of the aorta. The structure of the aorta in its posterior semi-circumference is normal; in its anterior circumference, the yellow elastic tissue is devoid of the external muscular fibres; the cellular coat is also wanting and is replaced by the reflected membrane (1. 1. 1. 1.) of the outer vessel. Numerous ossific deposits exist in the aorta between its serous and elastic coats, but none in the external vessel. Immediately above the bifurcation into the primitive iliacs the external vessel ceases—the red muscular circular fibres and yellow elastic coat become firmly united in the entire circumference of the aorta, and the structure of the iliacs and that of the other arteries throughout the body present the usual arterial formation.

Abdomen. Stomach contracted, structure normal except near the pyloric orifice where its coats were thickened with carcinomatous alteration of the muscular and cellular tissue. Small intestines natural. Several of the mesenteric glands presented a scirrhus appearance. In the left kidney were masses of half an inch in diameter, of a dull white colour, hard texture, but without distinct striæ.

Uterus enlarged, double its natural size, structure hardened, presenting in some portions when cut a white surface without any evident striæ, (*tissue lardacé*,) whilst other portions were evidently marked with striæ of a dull yellow colour; in the neck near the os tincæ was a softened portion of cream colour (*encephaloid*).

Remarks. The inquiry at once presents itself what is the character of the anomalous formation of the aorta? Was it congenital, or is the external vessel factitious? This problem was highly interesting in its character, and for its elucidation the specimen was submitted to the examination of several of the most distinguished anatomists of this city. From the eminent Pro-

fessor of anatomy of the University of Pennsylvania the writer received the following communication.

January 29th, 1836.

DEAR SIR:—I have made a further examination of the aorta of your patient, and am more disposed to the opinion already expressed by me, that its original conformation was normal but at a subsequent period, a laceration of the internal and middle coats occurred in the great sinus of Valsalva; and that a column of blood was introduced under the cellular coat so as to detach its semi-circumference from the middle coat down to the primitive iliacs, and also produce a similar condition in the roots of the large branches from the summit of the arch of the aorta.

The arterial structure which has been so well developed in the factitious routes, the fibrous cords like cordæ tendineæ at the margins, and the well defined orifices of the intercostal arteries all prove the antiquity of these routes.

The precise time of life at which so remarkable a change happened can of course only be conjectured; if after birth, it must have been brought about very slowly so as to accommodate the system to it.

I am very sincerely &c., your friend,

W. E. HORNER.

Subsequent to the receipt of the above note, further dissection showed the identity of structure of the middle coat of the external or aneurismal vessel with that of the aorta, and the intimate union of the two in the posterior semi-circumference of the artery. This induced the idea that the blood which had been propelled through the laceration near the sinus of Valsalva had not penetrated the entire thickness of the middle coat of the aorta, but had separated its external from the internal lamina. In order to ascertain whether a separation of this kind could be effected by a fluid thrown between the laminæ of the middle coat, experiments for that purpose were instituted. A small tube with a capillary extremity was introduced between the laminæ of this coat of the artery, and water was forced through it from a syringe in a direction parallel to the sides of the vessel. The result was, that the middle coat was separated in three distinct laminæ.* These views and facts were submitted to the examination of Professor Horner, who fully agreed with me in the idea, that the factitious vessel was the result of the separation of the external from the internal lamina of the middle coat, and that its internal membrane was formed by coagulable lymph, which had simulated the appearance of a serous tissue.

This case may, therefore, be regarded as analogous to those cases of dis-

* A specimen in my possession prepared in the manner above mentioned by my friend Dr. Bush of Wilmington, Del., whilst resident physician of the Hospital, shows the separation very satisfactorily.

secting aneurisms reported by Morgagni,* Nicholls, Laennec,† Guthrie,‡ M'Lacklin,§ Shekelton,|| but differing from them in this, that the aneurism in this instance was formed *between* the laminæ of the middle coat, and that the blood in circulating through the factitious vessel supplied the intercostal arteries of the left side. My search for a parallel case has been unsuccessful, and I am compelled to consider that if this form of aneurism be not *unique*, it must be of extremely rare occurrence. The remarkable lesion of the innominate and left carotid arteries, where the blood after separating the tunics of these vessels as in the aorta, and forming two channels for its passage returns through another rent into the canals of the arteries, is similar to the two cases reported by Mr. Shekelton.

As regards the time when this dissecting aneurism commenced, I am induced by the history of the case, to suppose, that the laceration near the sinus of Valsalva took place eight years before death, whilst the individual was using violent muscular exertions in pumping.

References to Plates.

- Pl. I. Fig 1.* *a.* Left ventricle of the heart, opened from the apex to the base.
b. Cardiac extremity of the aorta laid open, showing the semilunar and mitral valves, and the orifices of the coronary arteries.
c. Pulmonary artery.
d. Left auricle.
e. External vessel laid open in its entire extent, bringing into view the aorta *f.*
g. Valvular opening through the coats of the aorta; the wire *h* is passed through the valve, showing the communication of the aorta with the external vessel *e.*
i, k, l. Arteries giving off from the arch of the aorta; they open into the external vessel at *m, n, o*, and also communicate with the aorta as indicated by the dotted lines.
p. Intercostal arteries of the right side of the thorax, *communicating with the aorta.*
q. Intercostals of the left side opening into the external vessel *e.*
r. Foramina between the aorta and external vessel.
s, s, s. Tendinous bands passing from the internal coat of the external vessel, connecting it with the aorta.
t. Termination of the external vessel near the bifurcation of the iliac arteries.
u. Arteries of the abdomen communicating with the aorta.
v. Internal iliacs laid open.

* Epist. LVIII. No. 13.

† Tome III. p. 295, Edition 1831.

‡ Guthrie on the Diseases of the Arteries, p. 43.

§ Glasgow Medical Journal, Feb. 1828, p. 81.

|| Dublin Hospital Reports, Vol. III. p.

Plate •

b

a

r

Fig. 2. f. Aorta.

- p.* External vessel laid open and terminating at *t*.
- u.* Orifices of the arteries, of the abdomen opening into the aorta.
- w.* Serous coat of the internal iliac.
- x.* Muscular coat of internal iliac.
- y.* Cellular coat of internal iliac.

Pl. II. Fig. 1. a. The Heart.

- b, b.* Pulmonary artery.
- c.* Horizontal section of the aorta, showing the valvular opening, (into which the wire *d* is introduced,) by which a communication is established between the aorta *f, f, f*, and the external vessel *e, e, e*.
- e', e', f'.* Sections of the coats of the external vessel and aorta; *e', e'*, internal coat of the external vessel laid back; *f'* internal coat of the aorta, in which is much ossific deposit.
- g.* The innominate; *h,* Left carotid; *i,* Left subclavian. The innominate and carotid near their orifices are also *apparently* double. In the innominate the appearance of the concentric vessel extends half an inch; in the left carotid, two inches, whilst in the left subclavian there is only a valvular septum at its mouth between the aorta *f*, and the external vessel *e*.
- n, n, n.* Wires which pass into the external vessels *e, e, e*; whilst those marked *m, m, m*, pass through the orifices opening into the aorta *f, f, f*.
- p.* Intercostals of the right side.
- q.* Intercostals of the left side.

Fig. 2. Dissection of the coats composing the vessels *e* and *f*.

- 1, 1, 1, 1, 1, 1, 1. Internal coat of the external vessel *e. e*.
- 2, 2, 2, 2. Middle coat of the same vessel consisting of muscular fibres.
- 3, 3. Cellular coat surrounding the external vessel, and common to both on the posterior semicircumference of the aorta.
- 4, 4. Proper fibrous coat of the aorta *f*.
- 5, 5. Serous coat of the aorta.

Fig. 3. Horizontal section of the vessels.

- e.* External vessel.
- f.* Aorta.
- 1. Internal membrane of external vessel.
- 2. Middle coat of the same, composed of muscular fibres, uniting and blending with middle coat of aorta (5) in its posterior semicircumference at 6, 6.
- 3. Cellular coat investing the outer circumference of *e*, and the posterior portion of *f*.
- 4. Middle coat or yellow fibrous tissue of aorta.
- p.* Intercostal artery of right side communicating with aorta.
- q.* Intercostal of left side, originating from the external vessel.

ART. II. *Account of a case of Dissecting Aneurism seen at an early stage.* By PAUL B. GODDARD, M. D., Demonstrator of Anatomy, University of Pennsylvania.

In January, 1836, I was requested by Dr. William Harris to make an examination of the body of a woman who had died under the following circumstances: This woman, who was cook in a respectable family in this city, was taken suddenly ill about five o'clock in the afternoon, whilst making some exertion, and complained of faintness and oppression in the region of the heart. Dr. Harris was immediately sent for, and caused her to be bled, which relieved her considerably. He saw her again in the evening and found her weak, but observed no symptoms indicative of immediate danger. He was called up to her, however, in the night, and found her moribund; death took place soon after midnight.

On examination, the pericardium was found distended with dark blood, firmly coagulated, estimated to amount to at least eight ounces.

The heart was large and fat, but its structure was normal in every part; the lining membrane of the aorta presented a yellowish appearance, studded here and there with minute ossific patches; about three-fourths of an inch from the semilunar valves a rupture was found nearly an inch in length in a transverse direction, which extended through half the thickness of the middle coat. A channel led both upwards and downwards from this point, which was produced by the separation of the laminæ of the middle coat, extending in width to one-half the circumference of the artery. The upper channel followed the arch of the aorta, and descended as far as the origin of the eighth intercostal artery, leaving the aorta at the summit of the arch to run some inches between the coats of the innominata, left primitive carotid and subclavian. It also ran along some of the intercostals. Many obstacles were thrown in the way of a more perfect dissection by the family, and the distance to which it extended in the vessels of the neck was not precisely ascertained.

The whole of this channel was occupied by a coagulum of dark blood. The lower channel, which appeared to be subsequently formed, and in all probability caused the death of the patient, extended from the rupture in the internal coat to the point of junction of the fibrous pericardium with the root of the aorta; it passed between the two, and then, by a rupture of the serous pericardium, escaped into its cavity.

The woman was very fat, and appeared to be well formed, muscular, and in good health at the time of the accident. Every other organ of the thorax and abdomen was normal. The brain was not examined.

The preparation, which was obtained with difficulty, stands at the side of Dr. Pennock's in the anatomical museum of the University.

I believe that if the rupture had not extended into the pericardium, the

woman would have lived, and an adventitious serous lining being formed for the new channel, it would have presented in after years, the same appearance as Dr. Pennock's preparation. There is one point very remarkable. In Dr. Pennock's case, there are seen in the angle between the new and the old channel, on either side, a number of filaments covered with the new serous lining and extending from the old vessel to the new; in my preparation, the same filaments exist, formed of shreds of the middle coat, but smaller than in Dr. Pennock's, in consequence of the want of the adventitious covering.

The occurrence of the two cases within a short time of each other, would go to show that the accident, when well understood, will be found to be more frequent than has been supposed.

ART. III. *Description of a Modification of the Double Inclined Plane, with an exposition of its advantages over other apparatus for fractures of the lower extremity.* By JOSIAH C. NOTT, M. D., of Mobile.

THIS apparatus consists of four pieces, a thigh piece, a leg piece, a moveable foot board, and a horizontal board resting flat on the bed.

Fig. 1

The thigh piece, Fig. 1, *a*, is fifteen inches long, eight inches wide at the upper, and seven inches at the lower end, one inch and a quarter thick; the upper surface is hollowed out a little and brought to a thin edge above, to fit well under the nates; the corners are rounded off, *otherwise they would be in the way in passing faces.* Three narrow slits are cut through on each side, two inches from the edges, for the leather straps to pass through, one as near the knee as possible, one near the groin, and the third intermediate.

Leather straps with buckles, Fig. 1, *b, b*, long enough (two and a half feet,) to pass round the limb after the pads and splints are applied, and buckle firmly across.

The leg piece, Fig. 1, *c*, is two feet long, seven inches wide at upper, and

six at the lower end; it has a slit at the lower end, seven inches long, and one and a half wide for the purpose of receiving the tongue of the foot board and allowing it to move up or down, to suit limbs of different lengths. There are four narrow slits for the passage of straps as in the thigh piece, one as near the knee as possible, one near the ankle, and the other two at intermediate points. A row of small holes are bored horizontally through from one edge to the other, passing through the long slit and tongue of the foot board, for the reception of a strong wire which fixes the foot board to the leg piece, at any point which may be desired.

The foot board, Fig. 1, *d*, is twelve inches long, and four wide, with a tongue one and a half inch wide, so as to fit closely in the long slit, where it is firmly held by the wire. In order to hold it more steady, it has a small block nailed on the lower back part on a level with the commencement of the tongue; this block prevents the foot from pushing it forwards.

The horizontal board which rests on the bed, Fig 1. *g*. is notched at its lower extremity, Fig. 1. *f*.; in these notches the leg piece is supported and by means of them the angle may be varied when necessary—it is three feet long and eight inches wide at each end—it is fastened to the thigh piece two inches from the upper extremity of the latter by two hinges—the thigh piece fits better under the nates for projecting over in this way—these hinges may be of iron or leather.

The joint between the thigh and leg piece, Fig. 1. *e* is formed like a carpenter's rule—the two pieces being fastened together by a piece of strong wire—iron or leather hinges would answer here also—the angle formed here *should be rounded off* to prevent injury of the ham.

In the thigh and leg piece, half an inch from the edges on each side there is a row of holes, Fig. 1. *h*, half an inch in diameter, to receive wooden pegs six inches long which stand perpendicularly on each side of the limb, see Fig. 2. *k*.—these may be inserted at any points the surgeon thinks advisable, to give additional firmness to the fixtures—thus giving all the advantages of a fracture box without its inconveniences.

Extension, in fractures of the thigh, is effected, in this apparatus, principally by the *weight of the leg* resting on the calf and whole under surface down to the heel, by the straps buckled across to keep it stationary and where necessary by an extending band or gaiter (on which there is very little stress) which fixes the foot to the foot board. The lower fragment is thus held firm while the body is resting comfortably on the bed. It will be seen at once that if the fragments are properly adjusted and the limb placed over the inclined boards (the thigh board being of the proper length) *shortening cannot possibly occur*; the weight of the body makes a passive counter-extension, (without being hung up by the ham,) while extension is effected as before stated.

†

Manner of applying the Double Inclined Plane.—The surgeon may be guided by his own judgment with regard to the propriety of applying a roller or many tailed bandage to the limb; in the great majority of cases it may be dispensed with.

1. *In Fractures below the Knee.*—In the first place a narrow bag of the width and length of the two inclined planes, about half filled with bran, chaff, or what is much better *curled hair*, must be spread over the apparatus for the limb to repose on; it should then be placed under the sound limb so as to get every part of it properly adjusted, foot board, &c.; then raise the fractured limb, adjust the fragments, place the apparatus under it and lay it gently down on the cushion, taking care to arrange the latter so that it will press equally from knee to heel. It is frequently necessary to stuff cotton or tow under the part of the pad between the calf and heel. Next apply two narrow junks or pads prepared in the same way as the one under the limb, on the outside and inside of the leg and long enough to extend from the knee to the sole of the foot; over these two splints, Fig. 2. *l*, of the same length and three inches wide, if necessary, a pad and splint may be placed on the anterior surface of the leg also and the four straps should then be buckled firmly across. Before all this is done, however, the foot should be bound by a bandage to the foot board; if the fracture is oblique it may require a gaiter.

If preferred wet binder's boards may be placed next to the leg and the junks on the outside. One or two straps should also be buckled across the thigh to keep it still. A few pegs, Fig. 2. *k*, should also be inserted along each side to keep the whole more steady.

This dressing answers for *all* the fractures of the leg, oblique or transverse, simple or compound, and displacement is impossible.

2. *In Fractures in the Middle or Lower third of Femur.*—The application is equally simple here and should be commenced in the same way, by spreading over the apparatus a stuffed bag for the limb to repose upon, and adjusting it properly on the sound limb first so as to be sure that every thing will fit snugly. Three junks and the same number of splints long enough to extend from the pelvis to the knee on the outside, inside, and anterior surface; these are properly placed and the thigh straps buckled

across. The foot must be bound to the foot board and the leg straps buckled across to keep the leg quiet.

A very important point in fractures of the thigh is to have the *thigh piece of the proper length*, and this may be determined by applying it first to the sound limb. If the thigh piece of the apparatus is too long for the patient, place a folded blanket under the pelvis, which will be equivalent to shortening the thigh piece as it brings the pelvis nearer the angle of the inclined planes. If the thigh piece is too short for the patient, place a board under the horizontal board of the apparatus and this will be equivalent to lengthening the thigh piece.

3. *In Fractures of the Femur in or near the Neck.*—In these cases the apparatus of Desault, Boyer, or Hagedorn, and in short all other than the double inclined plane are confessedly inadequate to a cure, without deformity.

There are difficulties to be surmounted even with the double inclined plane, but I do not think them very great, and it must be recollected that we have no choice. The indications in those cases are:

1st. To keep the limb of its natural length.

2d. To flex the thigh upon the body and the leg upon the thigh so as to relax all the muscles which have a tendency to produce displacement.

3d. To raise the body by placing under the back an inclined board or bed chair, in order still further to relax the iliacus internus and psoas muscles.

4th. To keep the foot firmly fixed in the upright position.

5th. To keep the trochanter a little raised by putting under it a wedge shaped pad, where the fracture is in the neck—thus preventing one end of the bone from falling below the level of the other.

6th. To keep the fractured surfaces in close apposition.

7th. To prevent the motion of the fragments.

8th. To fix the pelvis.

Now I repeat, that these indications, all of which are important, cannot be met, by any other apparatus than the double inclined plane.

The manner of dressing these fractures is precisely the same as that described for fractures in the middle and lower third, except that the splint on the outside of the limb should be long enough to reach beyond the hip joint and in addition to the straps be secured at the upper end by a bandage passed around the pelvis. This assists much in controlling the motions of the pelvis.

In these cases it is all important that the pelvis should be fixed, as motion from side to side would necessarily produce derangement. Where the patient is restless the only effectual plan which has occurred to me is that (which I adopted in Case 1st) of placing a double inclined plane under the *sound*, as well as the broken limb—the two being pressed up, on the same level, under the nates, will of course prevent any twisting motion and keep the pelvis in its proper position. In order to keep the relative positions of the two double inclined planes the same, lay a narrow board across the foot

of the bed in contact with the bed posts—let the lower ends of the horizontal boards of the two apparatus rest upon the cross board, and fasten them together by boring a hole through each and inserting moveable pegs. The apparatus for the sound limb may be of the simplest kind—no junks, splints, or straps are required—there is nothing wanting but to let the limb rest on the inclined planes—it can be taken away when fæces are evacuated and replaced without the least trouble. See Case I for a practical illustration.

These cases are comparatively rare, fractures of the femur generally occurring near or below the middle.

The advantages of the double inclined plane over other apparatus for fractures of the lower extremity, are the following:—

1st. The double inclined plane costs but little, is so simple in its construction that it can be made by any one; is easy of application, and when applied difficult to derange; the angle, too, in most cases can be varied occasionally, which gives great relief to the patient.

2d. Extension and counter-extension are steadily preserved, the fragments are better guarded against motion, while, at the same time, the patient can be with much less risk, moved from one part of the bed to another.

3d. It is constructed in such a manner, that it can be adjusted so as to fit limbs of different lengths—is *equally applicable to all the fractures of the thigh and leg*, whether simple or compound; and therefore, with a few shingles for splints, and junks, a dressing will always be in readiness for a fracture of the lower limb; one apparatus of this kind will last a surgeon for life.

4th. The foot is so well secured that no retraction or lateral motion can occur to derange the fragments.

5th. If there should be a wound in the soft parts, swelling or inflammation, the limb may be simply laid over the inclined planes, the foot bound to the foot board and two or three straps buckled across to keep it steady—extension and counter-extension are thus kept up (which is all that is necessary until callus begins to form) and there is no impediment to any local treatment which may be deemed requisite—or even after the limb is fully dressed you may, at any time during the cure, open the dressings to examine the limb without the possibility of harm.

6th. The flexed position relaxes the muscles, (thereby counteracting the cause of shortening) is much more comfortable than the straight position, and obviates in a great degree that painful stiffness which often follows the latter.

7th. The flexed position is greatly preferable to the extended, where the fracture is near the trochanters, or near the condyles. In the former case, the iliacus internus and psoas muscles, draw up the upper fragment, and in the latter, the gastrocnemii and popliteus draw the lower fragment down, so that the proper line and apposition of the bones is not preserved, and shortening or angular derangement or both are the consequences. This must be admitted by every one.

8th. The weight of the leg on one of the inclined planes, keeps up extension on the lower fragment (in fractures of the thigh), the extension being made principally on the calf; while counter-extension is effected by the weight of the pelvis, which holds the upper fragment in its place—there are no bands to produce excoriation—an extending band in some cases of oblique fracture may be necessary to keep the foot in its place, but the stress upon this is trifling—generally speaking, the foot only requires to be lightly bound to the foot board to keep it upright—the heel, instep and perineum, are thus saved from excoriation.

9th. The facility of passing *faeces*, too, is another great advantage—the patient has only to raise the sound limb, and a bed pan can be slipped under him without inconvenience.

10th. When the fracture is in the upper part of the femur, the patient must be kept always in a half sitting posture, but when in the middle or lower third, he can assume at pleasure any posture from the recumbent to the sitting, and may thus amuse himself with reading, writing, chess, cards, &c.

11th. The apparatus of Desault, Boyer, and Hagedorn, do not permit of access to injuries of the soft parts, when situated under the lateral splints.

The four following cases illustrate the efficacy of the double inclined plane I employ. I have selected these, because they occurred not in my own practice, but in that of other surgeons.

CASE I. *Fracture of the Thigh.*—The subject of this case, G. R., about nineteen years of age, from Charleston, while a student in the South Carolina College, became involved in a difficulty which resulted in a duel on the 29th May, 1833. I was at this time living in Columbia and the case came under my charge. His antagonist was shot through the abdomen and survived but twenty eight hours, and R. was shot with a large ball through the thigh fracturing the femur—the ball entered the right thigh on the outside, four inches below the trochanter and passing through the bone came out at the opposite point two inches below the groin so exactly over the track of the femoral artery that it must have been struck, though not with sufficient force to cut it, the bone having protected it.—The ball passed through a large plexus of blood vessels and nerves, and the hemorrhage was considerable though not alarming—the thigh swelled immediately to double size from extravasation of blood. I had him carried to town that night fifteen miles.

This case according to all authority was one which *demand*ed immediate amputation and was exceedingly interesting in many particulars, but I shall omit every thing but what relates to the subject before me.

I did not attempt to set the limb before the 11th of June (13th day) because I was afraid of sloughing in the track of the ball and that the motion required in setting it might produce a rupture of the artery and fatal hemorrhage. There being wounds on the outside and inside of the thigh which

required constant attention, the ordinary apparatus were inapplicable and this fact as well as the situation of the fracture (being very high up) determined me to select the double inclined plane which I had never seen applied. The limb was accordingly dressed in the manner already described, on the 11th of June, thirteen days after the accident. From my note book I take the following extract which I think important.

"June 16th. Patient has a great deal of pain in the wound, is very restless and cannot be confined in any position which will prevent him from twisting the pelvis to the opposite side and thus distorting the limb. The bones form a salient angle externally and the lower fragment rides the upper—the limb is shortened and the patient so restless that I fear an artificial joint. I have therefore ordered another double inclined plane for the *sound limb*, with the view of confining it and keeping the pelvis square, in hopes by this means of preventing the motion which produces the derangement of the fragments."

"23d. On the 18th the other double inclined plane was placed under the sound limb exactly on a line with the other, and the two acting like wedges under the nates, of course kept the two sides of the pelvis on the same level—they were fixed by pegs (as before stated) to a transverse board to guard them against motion. No bandages, splints or any dressing was applied to the sound limb except a pad for it to repose on. The foot of the broken limb was well secured to the foot board, a compress laid over the projecting extremity of the lower fragment and a strap buckled over it so as to draw this fragment inwards and counteract the angular derangement—(the other dressings as already described.) This arrangement succeeded even beyond my expectations—the limb is now straight and of its natural length."

In the early part of July the patient had a severe attack of intermittent fever for about a week, for which he took quinine and the usual remedies. On the 31st he was up walking about on crutches, and on the 18th of August he left town in a stage coach, perfectly well and without deformity.

During its progress this case was seen repeatedly by Dr. Wells and Dr. Gibbes who will vouch for the principal facts stated.

This young gentleman was one of high respectability, but misfortune seemed to have marked him for her own. He afterwards had the same thigh again fractured by a fall, three or four inches below the original fracture, and after recovering from this went on to Philadelphia (as a medical student) where he died with an attack of fever.

CASE II. *Fracture of the Thigh.* In the month of October 'last (1837) a young negro man belonging to Mr. Alexander Pope of Mobile fell through a trap door in the second floor of a warehouse drawing along with him a large box of goods, which fell upon his thigh and fractured it in *two places*, about four inches above the knee and also about four inches below the groin—the middle fragment too felt as if it was crushed into several pieces.

Dr. R. Lee Fearn and myself attended the patient together. We placed the limb over the doubled inclined plane (as described)—bound the foot to the foot board, and without any bandaging, placed pads, and on the top of these splints, on the outside, inside and anterior surface of the thigh—the thigh straps were then buckled firmly across, and also the straps across the leg. He was the most unmanageable patient I ever saw and appeared to be perfectly regardless of consequences. He would unbuckle the straps and take off all the dressings—but the limb still remained on the inclined planes and the foot, bound to the foot board in the upright position—he was unable to move the limb and *extension and counter-extension were thus maintained in spite* of him. At the end of five or six days, finding him so unmanageable, Dr. Fearn thought he could be confined better by Desault's apparatus; and accordingly the limb was taken off of the inclined planes and Dr. Physick's modification of Desault applied. The next day we found every bandage untied and the limb shortened—it was again applied and again everything was torn loose. We once more applied the double inclined plane which kept up extension and counter-extension, although he would unbuckle the transverse straps when he pleased. Under these circumstances unfavorable as they were the case did well—the bones united and on the forty-second day the man was up walking on crutches—about the termination of the third month he walked to our office without crutches, and when stripped and standing before us, the eye could not distinguish the fractured limb from the other—there was no shortening and no deformity.

But one double inclined plane was used in this case: the second is *very rarely* required.

CASE III. *Fracture of the Leg.* Mr. I. C. D., a connection of mine, was thrown from his horse during the last summer and fractured both bones of the leg about two inches above the ankle—the malleolus internus was fractured also. I applied the straight splints and other dressings ordinarily employed, which were continued for a week. He complained so much of pain in the knee and the point of fracture that I determined to put the limb on the double inclined plane, thinking that the more perfect support to the limb, and the relaxation of the muscles might afford him relief. I first laid down on the leg piece (the apparatus being first protected by a hair pad) the bandage of Scultetus and then placed the limb upon it. I next applied wet binder's boards on the outer and inner part of the leg from the knee to the sole of the foot—the strips were then drawn across—junks on each side and the leather straps buckled firmly over the whole—the foot also was secured in an upright position by being bound to the foot board. The relief from pain was immediate and I heard no complaint afterwards—the cure marched steadily and rapidly on.

In this case, junks next the skin and wooden splints or binder's boards on

the outside would have answered all the purposes of binder's boards and bandage of Scultetus.

CASE IV. *Fracture of the Leg.* This was a patient in the Mobile Hospital under the charge of Dr. Redwood, through whose politeness I was allowed to apply the double inclined plane. All the circumstances connected with this case (with the exception of the fracture being a few inches higher up) resemble so closely case third, that I deem it unnecessary to give a detailed account of it. He was rendered much more comfortable by the double inclined plane and was speedily cured.

Mobile, June, 1838.

ART. IV. *On the Diagnosis of Delirium Tremens.* By SAMUEL JACKSON, M. D. of Philadelphia, late of Northumberland.

THE principal object of the present paper is, to enforce the necessity of distinguishing Delirium Tremens, from mere temulent excitement and the mania thereby often produced. On this subject the present writer can speak with much experience, having been situated for twenty-five years among a great number of *deliri trementes* who afforded him, as their only physician, an abundant practice. Distilleries were numerous for many years, and all classes drank largely of spirits, no one being considered as hospitable, who did not set forth his strong drink to all persons, even to the young.

By the terms mania a potu and delirium tremens, we have always understood that irregular sleepless excitement, which often obtains on the sudden abstraction or diminution of accustomed alcoholic or opiate draughts; and this has been the understanding of every physician with whom we have conversed, from the beginning of our studies twenty-nine years since. If this definition be correct, the disease can in no case be the "immediate consequence of the use of liquor" as an eminent writer expresses it, No. XVII. p. 167 of this Journal, but it must be in all cases the immediate consequence of the want of liquor.

The *direct* effect of the poison, then, is one disease, and the *indirect* effect or delirium tremens is another; yet some physicians who entertain correct opinions as to the cure of these *two diseases*, still treat of them under the same name, consider them as one, and then vituperate their brethren for attempting to cure them both, as *they suppose*, by the same methods. There is herein such a display of twofold error, as ought to be carefully and quickly corrected. They are not the same disease, nor do the somnifero-stimulant physicians treat them by the same or even by similar methods. When this

point shall be clearly settled in the minds of all, and surely it is high time to settle it, we shall all come to an adequate understanding of the various conflicting opinions which have been advanced. We shall see clearly, how one physician cures his *supposed* cases by simple incarceration without medicine—how another sometimes cures by emetics—a third by bleeding and other antiphlogistics—a fourth by Epsom salts followed by wormwood tea—a fifth by the cold bath and calomel—a sixth, seventh, and eighth, by other and various means; but one thing of more importance than all this we shall see, that these methods are successful only in mild cases which cure themselves, or in that temulent excitement which is “the immediate consequence of the excessive use of liquor,” and that there is but one uniformly successful method of treating genuine delirium tremens *in its deadly grades*, which is the forcing of sleep by opium or spirits. We shall see that when the disease is fully begun in a patient favorable to the full development of *a bad case*, that he must be overwhelmed by one or the other of these remedies, or suffered to die.

We have hinted above, that it is high time to ascertain what is delirium tremens, for in relation to this subject we do believe there is no little misunderstanding. Even in Mason Good's great work, the last edition, not great by its usefulness, but by its intended comprehensiveness, the disease is treated of under the head of *vapours*, as a variety of *hypochondriasis*, its most prominent pathognomonic, wakefulness, not even named; and a late writer of great eminence represents it as an accidental concomitant of local diseases, which being removed, the delirium will subside. “Restoration to health,” he says, “took place speedily and completely after sleep had taken place.”—See the last Number of this Journal, p. 520.—Dr. Gregory too, in his systematic treatise on the Practice of Medicine, places this disease between phrenitis and hydrocephalus and even supposes, that it is sometimes produced by the poison of lead and by emotions of the mind.

We further infer, that there has been much misunderstanding of the subject, from the cures that have been so often performed by the most insignificant means, and often by those means which very many physicians consider as hurtful. Dr. Ware (see last Number of this Journal, p. 520) speaks of curing two patients by blood-letting only; and Dr. Potter, in his notes to Armstrong, carries bleeding to the amount of one hundred ounces in three or four days, as a necessary and salutary remedy; he has even drawn forty ounces at once without regretting what he calls a “sanguinary measure.”

Upon a par with this, is Dr. Armstrong's “sanguinary measure” in typhus fever, when he speaks of drawing blood to the amount of sixty ounces in two days from his pupil Mr. Cavel, and fifty ounces from himself in the same space of time. We venture to assert, that when patients are saved by such effusions of blood, there is neither typhus, nor delirium tremens, present.

Authors, moreover, speak of cases wherein there is pain in the head, furious blood-shot eyes, contracted pupils, stupor, convulsions, much fever, angry passions,* with various symptoms of phrenitis; all these are at variance with the symptoms of delirium tremens, as recorded by the somnifero-stimulant practitioners. In drunkenness, and in the maniacal inflammatory excitement which sometimes follows it, we see these symptoms, particularly the most terrific convulsions, alternated by an almost unconquerable stupor.

Authors, too, use language that is applicable only to the inflammatory state, caused by the direct operation of spirits; but the prevailing error, we conceive, is the confounding this disease in name, and consequently in treatment, with that mania which is often the immediate consequence of ardent spirits. Thus Dr. Stokes (see Vol. XIII. p. 536 of this Journal) asserts, "that it is generally treated in a very empirical way," because, as may be learned from his paper, there are plainly two species of the disease—one produced by the sudden abstraction of stimulus, and *another* by plain direct intoxication. "I divide," he says, "all forms of the disease into two classes, *one*, in which the delirium is the result of an immense debauch, *another*, in which the patient has been in the habit of using ardent spirits in quantities, and has suddenly given up their use. In the former, the disease appears to be the result of excess, in the latter, of the want of the customary stimulus." He thus considers these two diseases as one.†

Upon the same principles, an eminent physician of our own country has published a dissertation, reviewed in Vol. IX. p. 164, of this Journal, wherein says the reviewer, "he combats the opinion that delirium tremens is in most cases immediately occasioned by ardent spirits; and states that in a large proportion of cases, this had nothing to do with it. This agrees with our own experience, as we have seen numerous cases in which the disease appeared in the midst of the most excessive indulgence, as well as under the other circumstances to which he alludes." And in the last Number p. 519, after a lapse of seven years, there are some observations by the same author, not only in confirmation of this opinion, but, intended to show that so far as the

* We never saw anger in any case of delirium tremens; we did see one patient standing on his defence in a threatening attitude, but it was only for a short time, while under the narcotism of eighteen or more grains of opium, which was then putting him into a salutary sleep.

[† Our esteemed correspondent seems, to us, not to have fully comprehended the meaning of Dr. Stokes. The main purport of his admirable Lecture on Delirium Tremens (see Vol. XIII, p. 536 of this Journal) is to point out the difference between mania from excess of alcoholic stimulation, and that from its sudden abstraction, and the entirely opposite treatment which they require. The Lecturer divides the two forms of the disease into *two distinct classes*. It is true he retains the term delirium tremens for both classes, and it may be better to appropriate it exclusively to that form which results from a deficiency of stimulus, but this is a mere difference about terms, and of very minor importance.—Editor.]

morbus ipse is concerned, it ought to be left entirely to the operations of nature; that the danger is not from the delirium and wakefulness, which will wear themselves safely away, but from concomitant local diseases, of which these are the merest accident.

Now the great utility of all these papers consists in showing most conclusively, that even eminent physicians do not yet know that *mania à potu continuo* is not the same disease as *mania à potu intermisso*; and that hence they accuse their brethren of attempting to cure "in a very empirical way," because they suppose them to give stimulants and opiates in both these forms of disease, without even a thought of discrimination.

But of this charge we shall certainly plead not guilty. The advocates of the somnifero-stimulant treatment have never recommended the opiate and alcoholic practice in the direct consequences of intoxication, a disease which they consider as the very antipodes of delirium tremens. The two maladies are not of one genus, say they do not belong to the same order, not even to the same class, one being we conceive a pyrexia and the other a neurosis. We are ashamed to write in the manner of the nosologists, but it seems necessary and very expressive on the present occasion.

It is certain that a majority of the best writers do rigidly confine the terms delirium tremens and *mania à potu*, to that sleepless maniacal state which is very often the consequence of the sudden abstraction or diminution of stimulus in those who have been long in habits of intemperance. Thus far we can go with certainty and no human being can go further without losing himself in a maze of hypothesis. A disciple of Rush would say that the sudden abstraction of stimulus caused a sudden accumulation of excitability; but why this should afford morbid excitement rather than healthy, or in what that morbid excitement might consist, he would very justly consider as beyond the reach of human attainments. Therefore, giving himself no concern about unattainable essences, he would wisely content himself with considering, whether the disease might be inflammatory or nervous; this would be enough for him, sufficient to ascertain and establish the general indications of cure.

So far gone in error are some authors when they accuse their brethren of treating this disease empirically, that, to make out their case, they jumble together under the same name two diseases, which are in their very nature, as well as in their indications of cure, as far removed from each other as nosology, or even nature herself could place them. There is not one advocate of the exclusive somniferous treatment who does not cheerfully acknowledge the entire propriety of Dr. Stokes's diagnosis, as well as the appropriateness of his *general* indications of cure, but his assumption that we give stimulants whether the disease arise from *potu intermisso*, or from *potu continuo*, must be rejected.

The advocates of the somniferous treatment consider that the remote and exciting causes of *delirium à potu continuo* are a unit, that is, the continued

operation of ardent spirits, or of the inflammatory state of the system induced thereby; while in *delirium à potu intermisso*, the remote cause is the abstraction of stimulus, the predisposing is the morbid excitability produced thereby, the exciting causes some accidental irritants, no matter what. As to the proximate causes, one is a pyrexia, the other a neurosis, as already mentioned; of these we only know that one tends to inflammation, and that the other does not, that one is cured by antiphlogistic sedatives, and the other by excessive stimulation or by the sedation of narcotics in alarming doses.

Dr. Stokes, after recounting the sad mortality attending what he calls "the empirical treatment," says, "it is an important law of the animal economy that similar symptoms may arise from very different causes;" this, to a certain degree, is true, so far as human penetration can go, but it happens that the collective symptoms of temulent excitement and those of delirium tremens are not similar; the symptoms of that state of the system which requires debilitation and of that state which requires stimulants, are not identical. Perhaps they are not always as different as might be expected, perhaps they cannot always be distinguished by those who have not had some experience, nor can you say that enteritis can always be distinguished from a spasmodic colic, or a hystericalgia from an inflammation of the uterine region; yet we must insist that every person who has seen a dozen cases of delirium tremens *à potu intermisso*, and half that number of persons mad with the direct effects of intoxication, can as easily and certainly attain to the diagnosis as he can in nine-tenths of the diseases of the human body. Yet we have been deceived in this matter ourselves, which we published in No. XIV of this Journal; so have others been deceived, as may clearly be seen in their writings; but still the collective symptoms are not identical, and the history of the case, if it can be attained, will accord with this fact.

One reason that intoxication is frequently confounded with delirium tremens, it may be presumed, is this—an intemperate man merely diminishes his accustomed potations and then is attacked, as we have often seen, with delirium tremens. We had one standing patient, who, through a strange perverseness, would not be made to understand this reasoning. When he was told that his disease had been brought on by brandy, he would sometimes deny the fact and triumphantly exclaim that he had used none for many days; at another time he would say that he had not interrupted his stimulus for a single day; that, on the contrary, he had been taking it very regularly, but more moderately, just enough, as Frederic II said of his eel pies, "just enough to keep soul and body together." Here then he supposed my opinions were completely refuted. He could not believe that a quart a day was necessary to keep up a healthy excitement, and that to keep soul and body together, required a more cautious diminution.

The disease being brought on by a mere reduction of the accustomed quantity, the friends generally take care that the patient is furnished with what, to the best of their judgment, is a suitable stimulus; for it must be observed that

the unlearned in medicine who are accustomed to drunkenness, know very well the general indications both of preventing and curing delirium tremens. Thus the sick man is continually supported in his disease, and the medicine not being sufficient to overcome the morbid excitability, the morbid excitement goes on increasing. We have met with many such cases, and particularly where patients had diminished their doses on account of some slight indisposition. Here the abstraction of stimulus often conspires with a diarrhœa, a catharsis, a blood letting, or some other debilitation, and the patient becomes sleepless, before even his physician has yet taken the alarm. A patient, too, is often in the incipient stage of this disease, before any one suspects it; he now begins to take his usual glasses, but they are not now sufficient, and the disease goes on. This we have often seen, and have as often found, that small doses of laudanum, fifty to one hundred drops, frequently repeated, were so manifestly useless, that we are not surprised to find the medicine condemned by those who have not the courage to increase the dose. The disease having once begun in a patient accustomed to afford a bad case, very large doses are required at once, small doses merely support life, or "keep soul and body together," but not in a healthy state; and if they are not supplanted by large doses, the disease continually increases, and the whole system of treatment is condemned. No remedy for such a state of things has yet been discovered but the highest doses of laudanum or spirits, or of both, which the system can bear; this position accords with experience, for we find from general testimony, that there is no abatement of the delirium till the brain is overwhelmed with a forced sleep. Without this, the patient must die, and must, of course, add another instance, however unjustly, to the number of cases fatally treated with opium, or, as Dr. Stokes says, "in a very empirical way." Numbers of cases, in confirmation of this opinion, now crowd on my recollection and are plainly seen in the lengthened mirror of twenty-nine years, which is bright before me. Not one of my own patients ever died of opium or through the want of it. Of more than *two hundred cases*, we have lost but four, and these were patients laboring under chronic diseases and organic lesions. But we do not say this boastingly, for the method of treatment is not our own; and, moreover, we can look back upon many patients who barely escaped, and who might have been cured "more quickly, safely, and pleasantly."

Dr. Stokes supposes a case of genuine delirium tremens *à potu deficienti*, and says "we derive very great advantage from the use of stimulus, we cure our patients principally by the use of opium, brandy and wine; but on the other hand I must confess I have never seen a case of excessive stimulation benefitted by such a plan of treatment; nay more, I have seen many patients, (*that is in excessive stimulation*,) who have been treated in this way, die with symptoms of inflammation of the brain or stomach and have found the diagnosis verified by dissection." Most unquestionably such patients so treated must die; but the Doctor should not have said that the

diagnosis was verified on dissection, for truly there was no diagnosis made in the case.

The men were supposed to be laboring under delirium tremens requiring stimulus which was administered, when in truth they were intoxicated or laboring under the direct effects of intoxication, and the proper debilitation would have carried off the whole disease and verified the diagnosis in a manner more comfortable to all parties concerned. Dr. Stokes's paper is concluded thus:—"The rule I have laid down for myself is this; when the disease proceeds from a deficiency of stimulus, give wine, brandy, opium, &c.; but when the stimulation has been excessive apply leeches to the epigastrium and head, and if the disease still continue, then you may have recourse to the opiate treatment." Through every paragraph he carries out his doctrine. "If the disease continue"—this we are bold to say is not what he ought to have written; though in truth it is precisely consistent with his, as we suppose, erroneous views. He ought to have said—when the first effects of this excessive stimulation are removed and delirium tremens sets in "you may have recourse to the opiate treatment."

The great utility of Dr. Stokes's paper is, that it teaches correct practice under an erroneous nomenclature and this leads us to presume that others who do not explain themselves so fully and do not practise so discriminately, are teaching what they do not themselves understand. Hence it is that we hear of so many deaths imputed to delirium tremens; for it is a fact very honestly confessed by the advocates of a *various* treatment, that they are not near as successful as those who profess to be exclusively somniferous and to believe that the disease is exclusively nervous.

There is an old maxim—*optimum est alieni frui insania*—which may be softened into this, that it is a most desirable thing to profit by the errors of others; but the masters of moral wisdom might have extended the aphorism so as to include our own errors also. The Doctor's practice has been corrected by the blunders of others, but his nomenclature and diagnosis he ought to have corrected himself.

But many physicians write about the presence of fever, of inflammation, of turgescence of the brain in genuine delirium tremens, often requiring the lancet, or cups to the nucha, or leeches to the head, and sometimes all the antiphlogistics. We have seen a great number of these tremblers and yet we cannot believe that we ever saw one such case. Within the last eight years we have bled and cupped a few patients when there was the semblance of inflammation, but no benefit resulted; we purged, puked, poured cold water on the head in enormous quantities; all was utterly vain, though the state of the system *prima facie* called loudly for this treatment; opium was at last our safety. But mark the sequel;—to these same patients, when again attacked and with all their feverish symptoms, we gave large doses of opium from the first, and thus made "a quick, a safe, and pleasant cure." So that if ever there was a disgraceful ontology in the

whole world of medicine it was here; the disease would appear to be an *ens reale*, as the metaphysicians would say, wherever it is found, and to be expelled the system or exorcised by the divine narcotic.

That great preceptor Dr. Rush was continually exhorting us to attend to the state of the system. So little had the subject been studied before his time, that it appeared to him necessary to preach, like Socrates, the same lesson continually; the consequence was that many of his numerous pupils seemed to consider the whole therapeutic science as consisting in the "*adpositio et ablatio*" of Hippocrates. But it is very possible to attend too much to the state of the system and too little to that of the disease, for it often happens that a local affection is to be cured only through the medium of the whole system, wherein it is sometimes necessary to raise this above and sometimes to sink it below its healthy action in order to remove the isolated disease. Thus in delirium tremens *à potu deficienti*, we may safely disregard the occasional inordinate force, fulness, and corded state of the pulse, for all this will gradually vanish under the judicious use of opium, particularly if ipecacuanha or tartar emetic be given therewith in as large doses as the stomach will bear without depression and without vomiting. Can any man discredit this, who remembers the enormous doses of laudanum and brandy that were given with triumphant success in the typhus petechialis of the Eastern states about twenty-five and thirty years since? Whenever in this fever they used debilitating antiphlogistics, the patient died, and a most vehement encephalitis with effusion and suppuration was found in the brain; yet the only successful method of cure consisted in giving large doses of opium, brandy, camphor, and other fiery stimulants.

We are sorry for the credit and consistency of medicine that these patients were not cured more scientifically; but nature is a wayward dame, she cannot be always turned out of doors, as Dr. Rush used to direct in dangerous diseases. Moreover we know so little of the nature of life and of the operation of medicine thereon, that it is difficult to generalise and compare with safety where experiments have not pointed out and sanctioned the result as well as the premises. Morbid anatomy, as confessed even by Dr. Ware, has thrown no light on the material causes of this unique disease; whatever has been discovered after death might always be attributed to some anterior or to some concomitant disease or to those congestions which take place in the last hours of life after all hope of a cure had been entirely abandoned.

It is maintained, No. XVII, p. 165, of this Journal, that "artificial sleep is not so necessary as has been supposed, that even in many of those cases where it is said to have been beneficially induced, it did not actually take place sooner than it would (have done) in the natural course of the disease." "That so far as the paroxysm is concerned, the patient should be left to the resources of his own system, particularly, that no attempt should be made to force sleep by any of the remedies usually supposed to have that tendency."

The reviewer concludes, by recommending this paper to the advocates of "the stimulant school, as showing that equal advantages may be obtained without the use of narcotics." And in the last Number, p. 522, it is suggested, that "opium if not absolutely injurious to these patients, is at least useless; and that our success in this disease, will be sufficiently satisfactory without it."

Now as to a "paroxysm," we must say that no such thing is known in genuine delirium tremens. The disease is one continual strain, to use a musical term, from beginning to end, sometimes *piano* and sometimes *forte*, but there is no paroxysm; and as to the disease curing itself, or sleep creeping on spontaneously, or without stimulants, there never was such a thing *unless in mild cases*, when nature has already performed the cure. To leave a patient in full delirium tremens, to nature, is the expectant method in the ultimate degree, which will soon cure a bad case for the last time.

Dr. Ware proposes to prepare a certain class of his patients for nature's cure, by bleeding, purging, puking, cupping, blistering; but as for those cases that are the immediate consequences of liquor "no medicines can be required beyond a dose of salts and an infusion of valerian, wormwood, or hops." Now this phrase "the immediate consequences of liquor," shows plainly, that he considers with Dr. Stokes, that delirium tremens is sometimes the direct effect of intoxication, which may be frequently cured no doubt, by the means proposed, but as to the real delirium tremens, it happens that we have seen not a few cases, in which puking and purging had been used by the family, sometimes by the family physician, and *expectation* too, through several days, until the whole circle of friends were in despair and consternation, while the patient slept none, and was continually getting worse—such patients we have often put to sleep in a few hours, and have thus cured the delirium at once; that is, we have broken it to such a degree that a continuation of the opium in reduced doses, has quickly restored the patient to perfect health.

The advocates of expectation may call this violence,—unnatural, artificial sleep, &c.; but which is most violent or most unnatural—to throw the patient at once under the influence of "kind nature's sweet restorer?" or to let him, by way of expectation, run about the house shouting that armed men are preparing to put him to death; that the house is falling upon him, &c.; horrors upon horrors accumulating around him; till the disease wears itself away? Many days this must certainly require, for we have seen it tried for a week, without any other advantage than to show the utter inefficiency of the method.

But, what dreadful thing is this "artificial sleep?" What is called sleep, is the same thing to all human eyes, by whatever means induced. If we are not mistaken, all sleep is artificial and forced; wakefulness is the natural state of the system and the most desirable; no one yields himself to sleep, but because exhausted nature requires it. We saw a woman drop asleep in half an hour after a long and severe labour, and she did

not awake for twenty hours; we saw that it was an easy healthy sleep, and we ordered that she should not be awaked. We have known people sleep twelve and more hours incessantly, after great fatigue and watching, but this was not unnatural, at least it was not morbid, but precisely what nature required after long watching and labour; so also if a madman sleep twenty-four hours, under a dose of opium, and then awake a sound man, his wandering intellect restored, his affections all centered on their proper objects, is this sleep unnatural, morbid, something worse than madness itself?

Expectation in medicine is a good and necessary thing; but where this ends and perturbation begins, every man has a right to determine for himself. This word does not afford a just or appropriate name for a sect or party; a physician who is eminently expectant in one disease is often a paragon of perturbation in another.

Between willing a thing and permitting it, there is no great difference. That physician then must be most *perturbating*, and must have a mind delighting above all things in uproar and confusion, who, instead of putting his *deliri trementes* to sleep, orders that they shall run about the house in their terrific insanity, till they fall down dead or commit suicide, an instance of both which we have known. Such a physician must be the very Napoleon of perturbation; and though patient, expectant, placid to the last degree, he cannot be considered as a physician in the best sense of the word, he does not cure “quickly, safely, and pleasantly.”

“Unnatural sleep!” But Dr. Rush prescribed six drops of laudanum to an adult patient under circumstances which led this most perspicacious man to consider these few drops as a sufficient dose; a medical student who heard this prescription in amazement ran to the house next morning to inquire how miss had rested and was further amazed to hear that she had slept soundly the whole night. What kind of sleep was this, was it unnatural? The lady from some cause had slept as her physician desired; but suppose she had slept precisely as much under the influence of 300 drops, would the sleep therefore have been a whit the more unnatural? That sleep only is unnatural or morbid which is forced upon the patient when it is not needed and from which he rises unrefreshed; such sleep as an indolent man obtains on a feather bed after a full dinner from which he rises towards evening half apoplectic, with inflamed eyes, headache, and general languor. Did any physician ever see the *deliro-tremens* awake in this miserable state after a sound sleep from opium? Does he require like Frederick a dash of cold water in his face to brighten his intellects? But what think you of that sleep by whatever means obtained, which almost wholly restores the unhappy patient who has been running through the house and over the roof of the house for a whole week without a moments’ sleep or sanity, seeing sprites, devils, serpents, armed men, all ready to destroy him and at last attempting to destroy himself—what kind of sleep is it, that suddenly cures all this? Oh, if procured by bleeding, blistering, purging, puking—

by thus removing accidental irritants that stand in no relation whatever to the delirium and wakefulness—it must be natural and salutary; but if you have given twenty grains of opium, it must be unnatural and lethiferous. The patient however is restored body and mind without one symptom of injury and this seems to be the one thing needful. Let the incredulous look into Dr. B. H. Coates's essay on this subject and be convinced.

But it is answered that the disease is often unquestionably cured by various means, often without opium and sometimes by very small doses. We do not dispute this fact. The *mildest* cases of every disease are certainly cured by various methods; but for the severer forms of delirium tremens we contend there is no remedy now generally known but sleep procured by opium or spirits. In such cases the patient has been growing worse and worse for several days; he never closes his eyes for sleep; he runs about the house and out of the house day and night in the greatest terror, he sees some imaginary terrific objects and his wild but timid eyes are continually fixed upon them; he trembles from head to foot and tries to direct the attention of his friends to the frightful objects around him; his pulse is weak, frequent, salient, his skin covered with a clammy perspiration; his eyes are wild and denote great alarm such as you might readily conceive in a boy watching for ghosts, never red and furious as some authors relate; there is no pain in any part of the body; there is no fever; if acute inflammatory action did exist it is now suspended.

This is the picture of a case that will not cure itself, the patient is not, as Cowper says, “a troubled sea that rocks itself to rest;” on the contrary, he will certainly go on from bad to worse till his strength is exhausted. But we contend that all these, the worst cases, are curable by opium or spirits, or both conjoined, could we possibly apportion the dose to the exigency of the case in hand. To attain to the requisite discrimination herein, it must be confessed, will ever be a difficult and dangerous task; so perilous, that some physicians will lose their patients through timidity, while it is possible, that others, in their benevolent zeal, may run into the opposite extreme. The soporiferous practice is a most uncomfortable one to the anxious physician, and blessed be the man who shall discover some safer and pleasanter remedy. We have sometimes retired to rest, or rather to bed, after prescribing large doses of opium, but the image of the patient in his last stertor has been as terrific to us as falling houses and twining serpents to the patient himself. Such extreme cases, however, have not often happened, and we have now the comfort of presuming that we have saved some lives at this great expense of our rest and danger of our peace.

Such cases as the above, which we presume to be dangerous, we have witnessed far more than one hundred times, but not in as many persons. In our former sphere of practice, there were about one dozen standing patients, each of whom was the subject of a bad attack for many years. Opium, in doses of five grains was of no service, unless we had been called very

early in the disease, which seldom happened. It is in such cases that opium loses all its credit, unless given in large doses, from ten to twenty grains.

These very patients, as well as I could ascertain, were never cured without my assistance, though some of them had friends who knew the nature of the madness, had learned much from experience, and were ever ready to administer opium or spirits to oppose the coming disease. We had acquired such skill in some of these standing patients, that we could prescribe twenty grains of powdered opium or an equivalent portion of sulphate of morphia, at a dose, and direct that half this quantity should be given in four hours, if the patient did not become sleepy. In this way, we have almost uniformly put the patient into a salutary sleep, and a smaller dose, given the moment he awaked, has almost completed the cure.

Thus it was, that, when Dr. Rodrigue went from this city into the midst of my practice, ten years ago, and saw the doses given and the certain cures they effected, he expressed himself as utterly astonished. But we do not pretend to superior skill; what we have thus done well, a great portion of educated physicians would have done better; we utterly renounce every feeling of arrogance in this humble imitation of abler men.

Now from the picture we have given above, with the pulse weak and frequent, the constitution broken by intemperance, the previous debility greatly increased by the abstraction of an accustomed stimulus, by days and nights of watching, by vomiting and purging, by abstraction from food, by a cold sweat, by incessant agitation, what is to be done by bleeding, purging, puking, cupping, blistering, by simple incarceration, hop tea, calomel, and cold bath, or by a choice of these things, however variously and skilfully combined? Will it be answered, that these means are to be employed to remove all concomitant impediments to health, when the delirium and wakefulness will wear themselves safely away.

Could the authors who reason in this way, and those who acknowledge a real disease, but advocate a *various* treatment, could they pretend to the general success which the somniferous practitioners arrogate to themselves, we should drop our pen at once; but the fact is, they do not, and hence our party are fairly left on the vantage ground.

If our opposers acknowledge, which we think they are bound to do, that the practice of the somnifero-stimulators is successful in their own hands, they cannot object to it unless on the principle of its temerity; and this, as we all know, has been a fruitful theme of argument, and not unfrequently of declamation. Some physicians appear to be greatly alarmed at the idea of giving more than from one to five grains of opium at a dose, and they condemn the larger doses, as likely to throw the patient into his final sleep. But if they never tried the experiment, they have no right to declaim on the subject. Medicine is a science founded in facts, not in theoretical prejudices. If, on the contrary, they have tried it, without killing the patient, this is enough for our present purpose; if they have unfortunately put the patient into his last

sleep, let them come boldly forth with their cases, which may prove a useful beacon to others. It was long ago observed by one of the Fathers in Medicine, that unsuccessful cases and errors, fairly related, would prove eminently useful; yet no one in the opiate treatment, as far as we know, has acknowledged a fatal dose, except in a solitary case, related in the last Number of this Journal, p. 520.

But if they have not the courage to try the experiment, let them look abroad into the world of philosophical medicine, and they will find stranger things, than twenty grain doses of opium in delirium tremens. Collateral facts and reasonings are of immense importance, when direct experiments are wanting; nor can they be too much multiplied if judiciously used, and made subject to the test of experiment. Can physicians, then, not call to mind, that when the cerebral and nervous systems are fully pre-occupied by some powerful excitement, no medicine whatever, not even external violence, produces its wonted impression. Hence, the tremendous doses of opium in tetanus and spasmodic colic, the flagons of wine in the old fashioned way of treating typhus fever, the insensibility of the body to cold, when preoccupied by fear; and hence also, the smiles of the American savage, in more than crucial torments, and the joyful face of the Christian martyr, burning at the stake.

Now, if ever the brain and nerves were fully preoccupied, and prepared to resist the operation of medicine, it is in delirium tremens; hence the enormous doses of opium that pass for nothing in this disease. In mania too, from many other causes, the system often resists the operation of medicine, particularly that of narcotics, nor must it be forgotten that most of these unfortunate *deliri trementes*, have been long accustomed to ardent spirits, which hebetate the system with respect to opium; nay, many of them have gone through the opiate ordeal already in their various attacks of delirium tremens.

Do not the advocates for the treatment by emetics, find that it is generally necessary to give from ten to twenty grains of tartarised antimony, to produce full emesis, and is not this from ten to twenty times the quantity usually necessary in other diseases? Yet our doses of opium, so much declaimed against, do not rise in the same alarming ratio. Further examples are not necessary, or they might be adduced. It requires consummate skill, and a comprehensive philosophic mind, to proportion the doses of medicine, to the state of the system, which varies in various diseases; in truth there is nothing in which the physician can so clearly, and triumphantly demonstrate his superior skill.

Dr. Copland, in his *Dictionary*, Article *Delirium Tremens*, speaks of our recommending in our former paper, No. XIV, of this Journal, from ten to twenty grain doses of opium every two hours. This is rather an inadvertency; for though we did recommend such doses, yet we did not say, nor did we mean to imply "every two hours," for we have certainly never gone thus far in the poisonous adventure. The Doctor states too, that we speak of four

ounces of laudanum having "been given partly by mistake, in twelve hours, which induced a sound sleep of twenty-four hours, and perfect recovery." That the patient did recover, and that he did sleep twenty-four hours, are facts as witnessed by Dr. Rodrigue, his physician, but I take some blame to myself for having related this case, as there was no satisfactory proof that the nurse did not deceive us. Yet we must contend that such a thing is possible under various circumstances unfavorable to the operation of narcotics; as, for instance, in persons who have been accustomed to the threefold narcotism of opium, spirits and tobacco.

The numerical system, which has been so usefully applied in establishing the relationship between symptoms and their causes, does not appear to us as applicable to the estimation of a therapeutic method. It is not the number of cases that is to be considered but rather the gravity of the disease, and the inevitable tendencies thereof which are ascertained by that "learned experience," as Bacon calls it, which is the result of impressions made from day to day through a series of years, by circumstances innumerable, the most instructive of which may certainly be committed to paper. For though the aged practitioner can hardly transmit more than an infinitesimal portion of his skill to the next generation, which is the principal cause of the tardy progress of medical science, yet there is a certain *anima medica* which is almost insensibly imbibed from the perusal of our old fashioned books; a certain community of spirit which obtains when we read the lively history of minute facts, as nature presents them.

All this appears to us to be totally cut off and lost by the numerical system of writing. Take 100 cases of pneumonitis and bleed them according to Louis's method, not till the third or fourth day, yet they may all be recovered if now skilfully bled and treated; then take an equal number in the same disease and bleed them from the first day, but unskilfully, and they may all perish. Neither time nor quantity nor both, is every thing; the constitution of the patient and the *effects* produced by bleeding and by the coadjuvancy of various minor remedies, are principally important.

An excellent writer in a late paper, (see the last Number of this Journal p. 550,) gives his readers eight series of patients, each having been treated on different principles and by different means. He does not describe any of these cases, so that to appreciate his statement, we are obliged to consider them all as equivalently ill, only so far as some of them had local diseases, neither caused by nor causing the delirium, nor yet having any necessary connection therewith, for such is his own opinion. This accords with the *numerical method*, and like that method in other particulars, it affords us no satisfaction. We should not require a particular description of every case; but simply the state of the pulse, the strength of the patient, the force of the delirium, the length of time the patient had been sleepless, how far his constitution was gone with intemperance—for from this short group of symptoms, the experienced practitioner can clearly see the tendency of this disease, whether it be to life or death.

In the eighth series, there are twenty-nine patients, in which "the mode of treatment may be properly denominated *expectant*." Of these one died of encephalitis and twenty-eight recovered without any treatment considered as directed to the disease itself. The fourth series consisted of two patients, both were bled largely and both recovered without any other remedy.

Now of the above thirty cases all cured by such simple means, the somniferous physicians, in the present state of their knowledge, must consider, some as plain intoxication or its inflammatory effects, and some as mild cases of delirium tremens which nature alone is capable of curing. Some were bled, some leeches, some puked, others were blistered on the nucha, and "all were more or less subjected to the operation of cathartics." Nothing then was done in these thirty cases but what was calculated to relieve the system of local embarrassments, for some medicines of the nervine class which were added, were considered by the prescriber himself as of no avail. Since then the symptoms in those thirty cases are not described, since they were cured by such simple means, or rather as the author would imply, cured of the mere delirium by no other means than unassisted nature, may we not fairly conclude that the disease was mild and without any tendency from the first to run into extremes? Moreover, patients being included in the author's definition who labour under the direct effects of intoxication, a portion of the thirty no doubt belonged to this class.

All which will appear the more certain when it is considered, that in his second series, seven cases were treated with small doses of opium, "not exceeding two or three grains in twenty-four hours," and that of these seven, two died without having slept. We ought to have been informed with what symptoms these two patients passed out of life; for dying sleepless, the reader must fancy that more opium might have been laudably tried.

In the first series are eight cases, "treated with large doses of opium with the intention of terminating the paroxysm by sleep." Of these eight, four proved fatal, having taken from twenty-four to seventy-two grains of opium in twenty-four hours. Three of these patients died without having slept, and here again, we are unfortunately left to divine the mode of their exit; and, attached as we are to the somniferous treatment, we cannot but fancy that more opium might have been tried, at least upon the principle of "doubtful remedies rather than none." But one of these four patients "died after sleep had been procured, never awaking, but expiring in a state of coma." Seventy-two grains of opium in twenty-four hours, is certainly a large quantity; but we are not informed whether this patient took the twenty-four or the seventy-two grains. Dr. T. Hewson, of this city, gave precisely this quantity in the same time, "with the most gratifying success." (Dr. B. H. Coates's Essay.) We ought to have been informed precisely how much the dead man had taken, in what time, and whether he took it on an empty stomach, whether he had been accustomed to this or any other variety of

narcotism; for this being the first case recorded in which the narcotic proved fatal, it would be highly interesting, were it detailed with all its circumstances. Is it of more importance, according to the numerical system, to know merely that the patient took opium, than to know whether he took the twenty-four or the seventy-two grains?

But it is high time to end this paper, which, however, we cannot do without sincerely deprecating all imputation of hypercriticism. It is the fate of the noblest minds in medicine to be transported by a benevolent zeal and hope in a new doctrine; such, we fancy, is the comfortable fate of this eminent physician in his application of the numerical system to the study of delirium tremens. We have expressed our opinions with unlimited frankness, because we believe they are founded in truth and nature, as they certainly are in authority and in a long continued, painful experience. We are well aware, that they are not logically arranged, nor yet illustrated or expressed to the satisfaction of the reader; they are desultory, and such they were intended to be, as ratiocination embraces much that is familiar, which, in the present case, would occupy too much time and space.

SUMMARY:—1. That delirium tremens is the consequence of a sudden abstraction or diminution of strong drink or opium in many persons who have long used either of these poisons intemperately.

2. That necrotomy has never discovered any lesions to which it could possibly be attributed; that it is purely nervous as far as human knowledge extends. As a stringed instrument is thrown out of tune by the atonic state of the atmosphere, so is the cerebral system in this disease, by the debilitating abstraction of stimulus.

3. That in all its grades it is curable by opium, or by ardent spirits, or by a simultaneous use of both, though we shall sometimes fail by not being able to ascertain, before it is too late, the requisite dose.

4. That it often supervenes on a system labouring under acute inflammation, the progress of which it will sooner or later suspend, so that opium may be given in the necessary doses. That though it arrests inflammatory action, it does not remove the effects thereof, which is the work of time.

5. That suspending inflammatory action as it does, those authors who speak of pain in the head with fiery eyes, requiring the loss of twenty to one hundred ounces of blood, have confounded the disease with temulent excitement.

6. That there are not two varieties of the disease, one to be cured by opium and another by evacuation, one the consequence of too little, and the other of too much stimulus.

7. That evacuations, of whatever kind, have no tendency to cure this disease; they cure temulent delirium or its inflammatory consequences.

8. That mild cases have often been cured by various means, which fact has been the cause of many errors; that the worst cases are incurable without opium or spirits in enormous doses.

9. That there is a delirium frequently arising from drunkenness, which

is often attended by convulsions, fits of drowsiness, flushed face, and inflamed eyes, with angry passions, noise and turbulence, in a few cases with trembling, and in many, with too much watchfulness; which delirium is often postponed for a day or more after the patients have quitted their spirits, but it is radically the inflammatory state of the system thereby induced. This, we believe, is often taken for delirium tremens, though it is easily distinguished therefrom, and requires a very different treatment. When this is subdued by the proper means, true delirium tremens sometimes supervenes.

ART. V. *Remarks on Pneumothorax, with cases, and an experimental inquiry into the causes of the metallic sounds heard in that disease.*
By JACOB BIGELOW, M. D., Professor of Materia Medica, and of Clinical Medicine in Harvard University.

THE sounds which are heard during auscultation in cases of pneumothorax, especially when life has been prolonged for a considerable time under the disease, have a character, of which the term metallic is eminently descriptive. This character may be recognised not only in the respiration and cough, but frequently also in the voice and the succussion and percussion of the chest. The sound is either sharp and tinkling, or it is prolonged, reverberating and ringing, according to the kind of action under which it is produced. In both cases the mechanical condition of the chest is apparently the same.

The sounds of pneumothorax, as will appear from the experiments detailed at the end of this article, are divisible, with relation to their causes, into those of impulse, and those of reverberation. The first requires the presence of liquid, the second may take place with only the presence of air. The first includes all the varieties of metallic tinkling which are heard in respiration, which also take place after speaking and coughing, and which may be abundantly produced in many cases by succussion of the chest. When well developed it is sharp, silvery and musical, resembling the snapping of short brass wires in certain children's toys. The second class, that of reverberating sounds, includes the varieties of amphoric breathing, and may be imitated by inflating a recent bladder to a considerable degree of tension, or less perfectly by blowing into a glass, or metallic vessel. When a sudden impetus is given to it by coughing, this sound becomes more intense, ringing and metallic. The voice also at times acquires the metallic resonance. If percussion be performed on the distended chest, while the ear is applied to its parietes, a ringing sound is communicated having more or less of a metallic character.

Metallic tinkling of the chest, although one of the most marked of the

physical signs, appears not to have been fully explained in regard to the immediate cause by which it is produced. Various hypothetical solutions have at different times been offered, but all of them have been objected to, or seem liable to objections, on the score of insufficiency; and no one of them appears at this time to have obtained a general assent. A brief summary is sufficient to present the leading features of the different modes in which this phenomenon has been accounted for.

The only explanation given by Laennec of this sound is by him considered applicable to cases of what he calls simple hydro-pneumothorax, in which there is no communication with the bronchia; a form of the disease however, the existence of which has been doubted by some subsequent writers. Laennec says that if a patient happen to raise himself suddenly in bed, and a drop of fluid fall from the upper part of the cavity of the pleura into the fluid beneath, it produces a sound like that occasioned by a drop of water let fall into a flask three quarters empty, and this sound is immediately followed by a distinct metallic tinkling. A similar sound he says may be heard by ausculting the epigastrium of a person who is swallowing water in minute quantities. This explanation has been adopted by various subsequent writers, as a general mode of accounting for the phenomenon of metallic tinkling.

Dr. C. J. B. Williams, author of a valuable work on diseases of the lungs and pleura, explains metallic tinkling on the principle of reverberation or echo, produced in a cavity of uniformly reflecting parietes by the communication of a sound, or of a soniferous impulse to the air contained within it. He considers that in common cases of pneumothorax communicating with a bronchus, if the fistulous opening be small, metallic tinkling will be produced, but if large, or if several such openings exist, there will be only amphoric resonance.

Dr. Thomas Davies, in his lectures at the London Hospital on diseases of the chest, says: "The metallic tinkling is caused by the resonance of air agitated upon the surface of a liquid contained in a preternatural cavity formed in the chest."* This explanation may have been suggested by a note of M. Meriadec Laennec in his edition of the great work of his relative, who says that the sound in question appears to depend upon the vibration of a gas upon the surface of a liquid.

Dr. James Houghton, author of the article pneumothorax in the *Cyclopedia of practical medicine*, adopts the idea of an echo, which he derives both from the dropping of fluid in a cavity, and from the entrance of air through a fistulous opening. The latter variety, he says, appears to be manifestly the echo of the air forced into the cavity, reverberating against its hollow parietes; and the sound, he thinks is more particularly caused by the bursting of minute air bubbles at the orifice of the fistula, formed as the air tra-

* London Medical Gazette, Vol. XV.

verses the latter by the entanglement of mucus. He thinks that the tinkling will be more or less loud and distinct in proportion as the fistulous opening is larger or smaller.

Mr. Guthrie, in the London Medical and Surgical Journal, 1833, asserts that Laennec and also all who hold that metallic tinkling "depends entirely on the passage of air through a hole in the lung into the cavity of the thorax," have been mistaken, and in opposition to this he mentions that to produce the sound in question, the air in the cavity must necessarily be compressed. "I do not, says he, deny the facts of the air, the hole in the lung, or the fluid; but I believe that to produce the sounds of the Jews' harp (metallic tinkling) the air in the cavity must be greatly compressed."

M. Beau, a French writer on the causes of the respiratory *bruits*, is not satisfied with the explanation of Laennec, and contends that metallic tinkling is produced by a bubble of air, which having traversed the fluid, bursts upon its surface. He founds his opinion on the fact, that he has never witnessed metallic tinkling, when the communication with the external air was above the level of the fluid. Dr. Spittal, of Edinburg, seems to have suggested this explanation of metallic tinkling, by the bursting of air bubbles as early as 1830.

Magendie, in his lectures quoted in the Lancet of 1835, says: "The causes which produce the *tintement metallique*, are not by any means well understood. Suppositions have been made, (they are made and abandoned, with surprising facility in medicine,) but when we come to examine them, we find nothing but mere theories without any shadow of proof." He tells us that the supposition that a drop of liquid sticks to the upper part of a cavity and then falls into the fluid below, is mere hypothesis, which may, or may not be true. He also denies the sufficiency of the explanation that the tinkling is caused by a bubble which traverses a fluid, and bursts upon its surface. His objections are grounded on an experiment, which he proceeds to repeat in presence of his class, showing the insufficiency of both these causes to produce metallic tinkling. In a dead subject, a quantity of fluid amounting to about half a pint was thrown into the chest. A perforation was then made through the pulmonary tissue, so as to establish a communication between the bronchi and cavity of the chest. A quantity of air was then forced in through the trachea, so as to enter the pleural cavity. No metallic sound was produced in the operation. Water was then dropped in through an opening in the upper part of the chest upon the fluid below, but this also produced no tinkling. Another orifice was made in the lung beneath the surface of the fluid and air injected as before. A bubbling sound, or "craquement" was heard in the chest, but nothing of a metallic or tinkling character could be perceived. Magendie considers himself as having disproved the explanations to which his experiments relate, but he does not offer any new one of his own.

In regard to Mr. Guthrie's explanation, which supposes the necessity of compressed air being present, this has been effectually set aside by the fact, that although in extreme pneumothorax, the air in the pleura is moderately compressed, yet metallic tinkling is known to be also produced in large tubercular cavities of the lungs, which communicate freely with the atmosphere, and therefore are not subject to any compression whatever.

The solution of this phenomenon given by Dr. Davies, and Laennec Junior, that it is caused by the resonance of air, agitated upon the surface of a liquid, seems to be too vague and unsupported, to require particular attention.

In regard to the explanations given by Drs. Williams and Houghton, which ascribe metallic tinkling to an echo, or reverberation of air from the sides of a cavity, the solution seems to me, to be neither adequate, nor very probable. Echo is the secondary sound produced by the reflected vibrations of the atmosphere. It becomes powerful only when many reflections converge towards the same point. Air moreover is a feeble conductor of sound, when compared with liquid or solid bodies. It is unnecessary therefore to suppose that one of the most striking sounds heard in auscultation, is produced by the secondary movement of a feeble conductor, when we have between the ear and the place of impulse, the direct agency of a much more powerful conductor, viz. a liquid. To elucidate this point, let any one perform the following experiment. Into a large earthen or porcelain bowl, pour a few ounces of water. Then produce a slight, and barely audible sound, by rubbing or snapping together the ends of the nails of the thumb and finger. If this sound is made in the air in any part of the cavity of the bowl above the water, it remains feeble, but if the nails be immersed below the surface of the water, the sound instantly becomes augmented to many times its former intensity, and it will be particularly intense to the ear of an auscultator applied to the outside of the bowl. Here then is a parallel case. The liquid in Pneumothorax and not the air, as will hereafter be seen, conveys the sound of metallic tinkling to the walls of the chest, and these transmit it to the ear of the auscultator, constituting an uninterrupted chain of vibrations.

Considering the subject as being yet imperfectly explained, and therefore, open to further inquiry, I have made some experiments in connection with the following cases, which I hope will not be found irrelevant to the question.

CASE I. J. B. cordwainer, aged forty-four, entered the Massachusetts general hospital, December 28th, 1836.—He has been troubled with cough and dyspnœa, during most of last year, increased during summer. Yesterday after exposure to cold during perspiration, had a sudden increase of cough and dyspnœa with pain shooting from side to side, and hoarseness. Now, skin hot and dry, face flushed pulse 98, respiration short quick, 50 per minute, cough hard, with viscid frothy mucous sputa. Complains of

pain in head and across hypochondria increased by upward pressure, or cough, tongue white, costiveness, dysury with frequent micturition.

29th, 31st. Percussion dull on right back, sufficiently resonant on left. Respiration very feeble in right back, with a slight bronchial sound opposite spine of right scapula. Bronchophony nearly articulate in same place. Supplementary puerile respiration in left back, Hoarseness amounting to aphonia, cough frequent, painful, with dyspnœa. About $\frac{3}{4}$ ii. of mucopurulent sputa daily. Costive; sleeps little.

January 2d, 1837. Has rested and felt somewhat better for two days. In right back respiration nearly inaudible, but voice and cough distinctly amphoric.

4th. By degrees the respiration in right back has grown more audible, and amphoric. Percussion resonant. In left back voice natural, respiration puerile. Purulent sputa, one to three ounces.

5th, 8th. Metallic tinkling in right back, at lower edge of scapula, slight and few, heard on each day. Amphoric respiration; voice and cough audible from summit to base of right chest. Dyspnœa and cough more easy. Percussion of right back tympanitic to base of chest; intercostal spaces prominent; right back when viewed vertically, much more prominent to the eye than left; semi-circumference an inch greater; intercostal spaces prominent, the anterior ones level in supine posture. In erect posture, base of right chest less resonant than when lying on face or left side.

9th. Paroxysms of great dyspnœa, obliging him to get out of bed. Breath, voice, and cough; amphoric from summit to base of right back. Frequent metallic tinkling. Resonance of front and back, of right side on percussion. Purulent sputa, $\frac{3}{4}$ iss.

11th. Rested better; pulse 104; anterior right chest tympanitic on percussion, with inaudible respiration from top to base; voice scarcely audible through parietes at same place, but towards base amphoric. Respiration in right back feeble, but amphoric, accompanied by continual metallic tinkling, frequent and rapid, resembling the boiling of a fluid in a glass retort or flask. Respiration highly puerile in whole left back; slight gurgling under clavicle. Very great exhaustion and anhelation, after rising to cough. Generally unable to expectorate unless he turns upon his left side; after which movement the pus flows freely.

12th, 13th. Many turns of violent and suffocative dyspnœa; metallic tinkling softer. Respiration in right back very feeble, in left back puerile.

14th, 16th. Breathes with more ease. Some ounces of purulent sputa raised each day. Amphoric or metallic respiration, voice and cough, with metallic tinkling more rare and feeble. Right anterior chest quite resonant on percussion, to the extreme base of the chest on inspiration, but about an inch less in extent at expiration.

From this time he continued delirious, with occasional twitching of

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muscles; respiration high and rapid; inaudible, or amphoric, in right front; faint metallic impulses and mucous rales, till the 21st, when he died.

Autopsy, Two and a half hours post mortem.—Emaciation not great; right side of thorax enlarged; intercostal spaces obliterated, this side measuring an inch more than the left, opposite the lower end of the sternum. Percussion resonant, for a quarter of the semi-circumference, flat behind. Succussion of the chest gives a distinct metallic sound from the motion of fluid. The right chest when perforated through water (see experiment I.,) discharged much air, and subsided gradually.

Thorax. Right pleura with strong old adhesions at apex, and along mediastinum; elsewhere covered with false membranes, mostly free, soft, whitish, recent. Its cavity contains nearly two quarts of opaque sero-purulent fluid, with detached flocculent masses of lymph. The lung being inflated in situ, air issued freely from behind the base near the spine, but the orifice could not subsequently be identified, on account of the rupture of cavities made in removing the adherent lung from the chest. Right lung greatly compressed, condensed, and nearly devoid of air, the upper lobe half destroyed by an abscess, a cavity an inch square, in the upper part of the lower lobe, and tubercles scattered through all. Left pleura with some old adhesions. Lung large, somewhat emphysematous, upper and lower lobes tuberculous, a cavity capable of holding $\frac{3}{4}$ i. in the upper part of the lower lobe. Air passages of natural size, some redness in right bronchia. Glands at bifurcation of trachea healthy; those in upper part of thorax and the cervical, enlarged and moist, but not tuberculous.

Pericardium contained about an ounce of turbid serum, with flocculi of recent lymph; heart healthy; right auricle slightly adherent; blood in right side partly liquid, partly coagulated, with some fibrin; in left auricle the same, but no fibrin.

Abdomen. Liver of average size, rather dark and friable, pushed down so as to reach the umbilicus, compressed so that its superior, and anterior surfaces formed a right angle. Gall bladder containing $\frac{3}{4}$ v. of very dark viscid bile. Stomach sufficiently healthy, except some small red spots about the small curvature. Mucous membrane of small intestines healthy.

CASE II.—I. C. ætat. 44, sailor, entered the hospital May 28th.* He was previously in the house three months ago with cough, and slight tuberculous signs. He now reports that he kept at work continuing pretty well until May 24th, when he had headache and dizziness in the afternoon, referred to having got wet in the rain the night before; in the evening fainted, and in the night had coughing and retching; raised without pain $\frac{3}{4}$ ss. more or less of frothy blood; has had much cough since, mostly in the night, with

* This case was most of the time under the care of Dr. Hale.

scanty expectoration of frothy mucus; cough and long inspiration have caused pain in the right side, and across the chest; has had no other pain, no chills, nor flushes; but has perspired considerably; has had little appetite and much thirst, bowels have been open daily; urine high coloured; feels very weak; tongue clean for most part, a little coated at roots; pulse 118.

29th. Slept better than out of house, but coughed considerably towards morning.

30th. Rested badly from great dyspnœa, which came on between nine and ten last night; bathed in a sweat; pulse 96; mucous rale in the throat; amphoric sound in respiration below left scapula; percussion resonant in the same place; respiration puerile on the other side; lies on the right side, much distressed on lying on the back or left side. Half a pint of thin mucous fluid sputa, frothy on top and opaque.

31st. Rested badly from dyspnœa, requiring him to maintain a stooping posture; five or six dejections; pulse 132, sitting up; dyspnœa now less urgent; a highly distinct metallic tinkle heard in the left chest, disappearing when he stoops forward returning as he bends back. Just below the angle of the left scapula strong amphoric respiration with clear metallic tinkle. In axillary region sound as of striking a brass vessel with a nail; great resonance of the left chest, both behind and in front on percussion. Strongly puerile respiration in the right back.

June 1st. Slept half the night by intervals sitting up and stooping forward No dejection; pulse 144; tongue moist, thick coat on centre, livid; countenance distressed, anxious; respiration 32, laborious; no pain when at rest, but on motion sharp pain through the left chest, below the region of the heart; speaks only in a whisper; feet and ankles œdematous; whole left chest both front and back very resonant; respiration amphoric with metallic tinkling loud and musical in the whole left back below spine of scapula and whole left front from clavicle downwards.

2d. Slept pretty well in the same posture as last night; two dejections; countenance anxious; skin warm with profuse perspiration; pulse 144; tongue white in centre, livid, moist; respiration 30, laborious; voice better than yesterday; amphoric resonance diminished; metallic tinkling as yesterday.

3d. Slept pretty well in his chair as before; four dejections or more; countenance continued distressed; skin moist but perspiration not excessive; pulse 128; respiration 32, somewhat less laborious, except after coughing; unable to lie down in consequence of increased difficulty of breathing and cough; cough not frequent but paroxysms long and severe; percussion every where very resonant in left chest except for a small space about spine of scapula, where it is only equal with the right; resonance continues to the very base of chest; respiration vesicular but feeble about spine of scapula; amphoric in lower half of back; natural respiration without metallic tinkle; after cough-

ing large and musical tinkle; in front no respiration heard below line one inch below nipple, above that metallic tinkle for the space of two or three inches and above amphoric resonance in natural respiration; in forced respiration metallic tinkle over whole left chest; no resonance of voice; in right chest respiration puerile.

4th. Slept pretty well in posture as for the last four nights, except that for two hours near morning lay down in bed and slept on right side with head low. Numerous dejections; countenance less distressed; pulse 124; cough less difficult but still laborious; about 3iss. of adhesive muco-purulent sputa; skin moist and warm; resonance of left back less than for some days past, though still greater than natural except about scapula; immediately over and about scapulæ, percussion nearly or quite equal in both backs; on two lower ribs of left back percussion resonant while leaning forward, flat on leaning backwards; respiration in left back vesicular about scapulæ and for an inch or two below, then amphoric for a space about the breadth of the hand, inaudible at base; no resonance or tremor of voice discovered either in back or side; metallic tinkling in front as before: also in back after cough. Sudamina above and about clavicles.

5th. In bed most of the night lying on right side; slept two or three hours by naps; four or five dejections; countenance improved; 3ii. of adhesive muco-purulent sputa; pulse 108; tongue clear at edges, moist, coated in centre, white, general colour livid; percussion resonant down to sixth rib in left chest: flat immediately below; percussion equal in both backs over scapulæ, and for two fingers' breadth below: below that much more resonant on left side, down to last rib, while leaning forward. When leaning back, more dull in the whole of the resonant space in back. Natural respiration vesicular about scapulæ, with sonorous rale: below scapulæ, amphoric resonance. In front, metallic tinkle after cough; metallic tinkle also in back. No resonance of voice at base of chest.

6th. Slept two or three hours during night, partly in his bed, lying on right side; partly in his chair; three or four dejections; very weak; pulse 120. Tongue still livid, cleaning at tip and edges, coated in centre. In natural respiration before fatigue, the only sound heard in left front chest is a slight sibilous rale. In same respiration, on leaning forward, amphoric resonance and metallic tinkle heard below scapulæ. Cough much the same: 3iij. of adhesive muco-purulent sputa.

7th. In chair all night; slept three hours at intervals; five dejections; countenance more distressed; pulse 132; respiration 36, more laboured than for the last two or three days. Tongue cleaner, rather less livid; nearly 3ii. adhesive sputa; coughs, he thinks, about once an hour; percussion dull in back on lower rib, when leaning forward; respiration amphoric both in front and back; natural breathing unaccompanied by tinkle.

8th. In chair all night; three dejections. Kept awake by difficulty of breathing. Cough less; expectoration about 3i. adhesive purulent mucus.

Countenance much distressed; pulse 132; tongue more coated; respiration 32—laboured. Hair, skin and clothing wet with perspiration. In natural respiration very little sound perceived, except some amphoric resonance and occasional metallic tinkling. Percussion, when leaning much forward, flat on lower rib, resonant above; when sitting up, flat on four lower ribs. A peculiar metallic ringing sound perceived by ear applied to sternum, when the back is percussed.

9th. In chair all night; slept none till daylight; three dejections. Since four o'clock has felt easier and breathed more freely; countenance less distressed; perspiration copious; skin warm; pulse 116; respiration 32; expiration and inspiration nearly equal. In quiet respiration only a feeble amphoric sound, accompanied with metallic tinkle. Amphoric sound accompanies the voice, and also percussion of the chest. Flatness of left back in erect position, extending only to fourth rib from base. Respiration in back with sibilant rale about spine of scapulæ, amphoric below. Forced respiration, accompanied with loud amphoric sound and tinkle. Cough less frequent, but severe, causing pain in left side. Less than 3ss. of opaque mucopurulent sputa.

10th. In chair most of night; slept very little, in consequence of dyspnœa, cough and pain in chest: one dejection. 'Tried lying in bed: was obliged by pain and dyspnœa to get up after ten minutes' trial. Countenance much distressed; breathing very laborious; respiration 40 in a minute; pulse 144; skin warm and moist; superficial veins much distended; percussion flat in left chest below a line about an inch below the nipple, on slightly leaning forward; flat below same level in back, resonant above. In natural respiration the only sound heard is a sibilous rale, perceived over whole upper part of front left chest; same amphoric resonance accompanying the voice; has coughed but little except when he lay down. About 3ss. of thick, opaque adhesive sputa, mostly of a greenish colour.

11th. In chair all night; slept none from dyspnœa; some pain in left chest; two dejections; countenance much distressed; coughs little; expectoration pretty easy; 3ii. of adhesive mucopurulent sputa; pulse 144'; percussion flat below nipple, also in back below corresponding line—resonant above; sonorous rale in whole front chest. No other sound in natural breathing. Amphoric resonance in back, feeble in natural breathing, loud and musical after cough. After speaking, metallic tinkling in front.

12th. Lay on couch all night without having head much raised. Could lie on left side as well as right, the first time for several weeks. Rested very well, but did not sleep much; one dejection; respiration 36, somewhat laboured, but less so than for several days past. Countenance less distressed; pulse, after waking, 108; tongue much less livid, moist, with a broken coat in centre. Percussion of left chest (still lying on left side) quite resonant, except at most dependent part of side, where it is flat. In natural respiration, the only sound heard is sibilant rale both in front and back. Forced

respiration, either by speaking or other effort, amphoric. Coughed but little; less than 3i. adhesive, white, frothy, mucous sputa. Immediately after rising, loud, ringing, amphoric resonance in respiration, and especially in cough, heard both in back and front. Limit of flat sound on sitting, on a line an inch below the nipple. Same metallic ringing sound on percussion of chest as before.

13th. In erect posture most of night; slept little from dyspnœa; three dejections. Discharge from bowels thin and watery; countenance moderately distressed; perspiration not excessive; pulse 116, tolerably full; respiration 36, high, laborious. In erect position, resonance on percussion extends down to one finger's breadth below nipple. Below this line, intercostal spaces on a level with ribs; above, intercostal spaces projecting, resonant. In ordinary respiration, amphoric resonance loud and distinct in upper part of chest. A ringing sound, on percussion, as before. No metallic tinkling heard. Abdomen full, moderately resonant.

14th. Slept very well, lying down, on either side; four dejections. Countenance less distressed; feels better; pulse 108; respiration 36, moderately laboured. Inspiration and expiration nearly equal. Percussion flat below line, a finger's breadth below nipple, resonant above. Same ringing sound as before, on percussion. Sounds of fluid readily distinguishable on succussion, heard with ear at a distance of a foot from chest. Moderate amphoric resonance in ordinary respiration. Two sides of chest nearly equal on measurement; left mamma more prominent to the eye than right, intercostal spaces protruding slightly. After some fatigue, amphoric resonance, ringing. Ribs of left chest scarcely raised in respiration.

15th. Slept pretty well, mostly in sitting posture; three dejections. Breathing more difficult when he attempted to lie down. Countenance anxious and distressed; skin quite cool, wet with perspiration; large sudamina about clavicles; respiration 36, laborious. Inspiration quicker than expiration. Cough little. Percussion about spines of scapulæ still equal on both sides. Ordinary respiration amphoric and ringing; when a little forced, voice and percussion ringing as before. Sound of fluid on succussion heard at distance of several feet.

16th. Slept none in night; was in sitting posture a part of the night, and in recumbent a part; breathing with equal ease in both; two dejections. Feels a little better; pulse 112; respiration 32, somewhat laboured; expiration and inspiration nearly equal. Tongue moist, clean; perspiration profuse; skin warm; sudamina about clavicles; coughed none. Does not know cause of wakefulness; thinks it was not difficulty of breathing. Lying on back, with shoulders elevated, whole left front resonant. In same position, percussion flat below axilla. Ringing sound on percussion not perceived in this position—percussion being on same side with face. Respiration simply amphoric in ordinary breathing, ringing on speaking.

17th. Slept most of night in sitting posture and recumbent, lying on back

or right side. Countenance much distressed; respiration quite laborious; inspirations quick; pulse 112. Tongue moist, slight coat on lobes, very slightly livid; skin cool and moist. Pain near left nipple if he lies on left side; no pain when at rest in any other position. Very little cough, \mathfrak{Z} ii. frothy mucous sputa. Line of flat sound level with nipple; respiration in right chest loud and coarse. Sounds in left chest as before. Ringing sound on percussion perceptible when percussion is on same surface with ear, in erect position.

18th. At six and a half A. M. found patient lying on back with shoulders raised, breathing quick and with tracheal rale. Eyes closed, pulse very small and feeble; extremities cold. Died soon after.

Autopsy, eight hours post mortem. Body not much emaciated, skin livid, lower extremities œdematous.

Left chest quite resonant to a line with axilla, flat behind this line. Right side dull over whole space below pectoral muscles. The air rushed out from a perforation on left side, as detailed in Experiment I. Left pleura universally inflamed, mostly red and roughened, and lined with a soft, bluish-white false membrane of variable thickness, separable in some places into layers, containing about five pints of thin, purulent, inodorous liquid, with coarse masses of lymph lying loose in the depending parts. Left lung collapsed very small, fleshy, bluish-black, pressed against spine and ribs, and nearly destitute of air, having a coat of lymph, and adhering behind superiorly. A rounded fistulous opening was found, half a line in diameter, and situated on the posterior surface of the lower lobe, an inch and a half below its summit. Through this orifice air issued, if blown into the trachea, and a probe pressed upwards entered a large bronchus. This opening communicated immediately with a superficial cavity an inch long by half an inch broad, and which contained a whitish, friable, opaque substance. No other cavity was found, but small tubercles and gray granulations in various parts of this lung. The bronchi contained bloody fluid, were pale, thin and polished, excepting that which led to the cavity, and which was thickened, darker and less polished.

Right lung universally adherent by pale, soft, friable, recent membrane, forming bands below, some of them an inch long, among which were cavities, containing \mathfrak{Z} viii. of reddish fluid. This lung contained many tubercles, and a cavity an inch long at its apex.

In front of the neck was a tumour, occasioned by an abscess situated between sterno-hyoid muscles, containing \mathfrak{Z} ss. of pus, with a lining of tuberculous looking matter.

Pericardium pushed to the right side, more than two-thirds of it beyond the median line. Heart healthy, except perhaps slight hypertrophy of left ventricle, which measured five-eighths of an inch thick at base, and five-sixteenths at apex. Weight, nine and a half ounces.

Liver somewhat enlarged, rather dark, pushed down within an inch or two

of the umbilicus. Small intestines tuberculous, especially on Peyer's plates, towards the end of the ilium, but no ulcers. Other viscera mostly natural.

CASE III.—A. C., a young gentleman aged twenty, called me to visit him June 28th, having just returned from a journey to the south. He reported that two years previously he had had a "lung fever," since which time his health has not been good. Last summer he was troubled with slight pains in the chest, emaciation, loss of strength, and some hectic symptoms, but does not recollect much cough. Being considered phthisical by his physician, he had been advised to pass the winter in the southern states. My first visit was made to him on the second day after his return, and one day before his death. I found him thin and feeble, barely able to sit up, with a hot skin and circumscribed redness on his cheek. Dyspnœa by no means urgent, decubiture dorsal, pain and stricture across both hypochondria, and none felt elsewhere: pulse 80. Left chest tympanitic, respiration inaudible; a slight metallic tinkle heard singly at each inspiration and expiration. Pulsations of heart feeble in cardiac region, stronger on right side. On the following day, without any great aggravation of dyspnœa or distress, he became much prostrated, with a small, irregular pulse, cold sweats, and diminished sensibility, and died on the succeeding night. By his own testimony and that of his friends, his cough had been slight, and the dyspnœa at no time urgent.

Autopsy, sixteen hours after death. The whole anterior chest resonant, the left tympanitic. On perforating the left chest through water, great quantities of air escaped. [See experiment I.] The quantity of sero-purulent fluid was not estimated, water having been thrown into the chest for the sake of the experiment. The left lung was adherent superiorly and posteriorly, and had tubercles and cavities in its upper lobe. The lower part of the same lobe was indurated by tuberculous infiltration, and had about the colour of gray hepatization. No communication between the bronchia and chest was detected except those produced in the cavities torn in the separation. Right lung healthy, excepting a few tuberculous lumps in its upper lobe. The heart was very small and flaccid, and was pushed almost wholly into the right chest. Mitral valves somewhat thickened at their roots with slight vegetation. Liver depressed, dark purple, flaccid. Gall bladder healthy.

I consider the last case as remarkable for the absence of any great dyspnœa or distress, after the signs of pneumothorax were so distinct as to lead to an unequivocal diagnosis of that disease.

EXPERIMENT I. Previously to the autopsies of the patients who were the subjects of Cases I. and II., a glass cylinder, open at both ends, was pressed into close contact with the chest, so as to hold water. Some ounces of that fluid were poured in, and a perforation was made through it, into the cavity

of the chest on the distended side. Immediately a large volume of air escaped from the chest, bubbling upwards through the water. In the third case, no cylinder being at hand, a superficial cavity was made out of the dissected integuments of the chest, and filled with water. Through this water a perforation of the chest was made on the left anterior surface. The air rushed out, producing strong ebullition, as in the former cases. The experiment was then repeated on the right side, and the perforation made through water as before. No air in this instance escaped, but the water was immediately sucked into the chest by the atmospheric pressure.

EXPERIMENT II.—Artificial respiration was produced in the body of the subject of Case II., by inflating the lungs through the trachea, and expelling the air by pressure on the abdomen. At each inflation, a most distinct, clear and abundant metallic tinkling was produced, accompanied with more or less amphoric sound, and could be sustained ad libitum by repeating the inflation. The sound was recognised by several of the medical gentlemen attached to the hospital,* as being the same which had existed during the patient's life.

This experiment was repeated in the examination of the body of the patient in Case III. It produced amphoric sound, but no tinkling. The latter symptom, it will be observed, was but feebly perceptible in examinations during life.

EXPERIMENT III. Through an aperture in the anterior part of the chest in the subject of Case II., a catheter was introduced and air blown through it into the cavity of the left pleura. While the end of the catheter was above the level of the fluid, a strong amphoric buzzing was communicated to the ear of an observer in contact with the chest. But when the end of the instrument was pushed below the surface of the liquid, and the latter made to bubble by continuing the inflation, an exquisite metallic tinkling was heard at the explosion of each bubble, resembling, as it had done in life, the sound of a little bell or musical wire. In the subject of Case III. this experiment was repeated, and varied by pouring into the chest different quantities of water. When a few ounces only were present, metallic tinkling was uniformly produced, but when two quarts or more were introduced, a bubbling only was heard, without metallic resonance. Similar results were also obtained by pouring a small stream, or letting fall drops of water from above, upon the liquid in the chest.

EXPERIMENT IV. Succussion and percussion were both found to produce the same metallic sounds in the dead body as during life in Case II. Metallic sounds elicited by percussion somewhat resemble those occasionally yielded by the heart, and, as has been observed by Bouillaud, these may be imitated by percussing the back of the hand pressed closely upon the ear, or

* Among the gentlemen present were Drs. Hale, Strong, Bowditch and Sargent.

by closing both ears with the palms of the hands, and walking on a carpet in a still room.

EXPERIMENT V. In the body of a person recently dead from accident, having no pneumothorax, a repetition was made of several of the foregoing trials. Air and water were forced into the chest, the former so as to distend the cavity and render percussion quite resonant. Ebullition of the fluid was then produced by blowing through a tube inserted between the ribs and pushed below the surface. The only result was a bubbling noise, having not the slightest metallic character. It will be observed that this was nearly a repetition of Magendie's experiment, and it probably failed to produce metallic sound for the same reason as in that case, viz. that the patient was not pneumothoracic.

EXPERIMENT VI. A bladder, and afterwards a stomach, each containing a few ounces of water, were inflated until thoroughly distended. Whenever the inflating tube was pushed below the surface of the liquid, and the inflation continued so as to produce bubbles, a sharp tinkling was heard upon the explosion of every bubble, by the ear applied as in ausculting to the outside of the bladder. In this experiment the sound becomes more exquisitely metallic, in proportion as the tension of the bladder is increased by farther inflation. Succussion of the bladder produces a similar effect. It is necessary that a recent bladder should be used, the texture and elasticity of which are not altered by drying. When the orifice of the tube is above the surface of the water, also when no water is present in the bladder, an intense amphoric sound is produced during inflation; and if saliva or other liquid, in small quantities, is blown through the inflating tube, a more feeble, or *sub-metallic* tinkling is produced.

From the foregoing experiments and cases, we may infer that the following agencies are concerned in producing metallic sounds of the chest.

1. There must be a cavity, the walls of which are preternaturally susceptible of vibration. This takes place when the pleura is pathologically distended, so as to overcome the obtuse or muffling effect of the contiguous soft organs, such as the lung, diaphragm and intercostal muscles. Some time is probably necessary to prepare the parts for this pathological resonance, since it fails to appear *post mortem* in healthy chests submitted to experiment. It should be added that when metallic sounds appear in simple phthisis, there are cavities of the lungs, the walls of which are in a state of tubercular induration.

2. The immediate or exciting cause of metallic tinkling, is a forcible or sudden disturbance of the liquid in a vibrating cavity like that described. The explosion of bubbles of air from beneath the surface of the liquid, appears to be the most common cause of such a disturbance; but it may also take place when a part of the liquid is thrown upward in the act of cough-

ing and falls back upon the remainder. The same occurs in succussion of the chest.

3. The vibrations which yield metallic tinkling are transmitted from the liquid to the solid parietes, and thence directly to the ear, without any necessary agency of an echo, or reverberation of air in the cavity. This is shown particularly by the experiment of the bowl, page 48.

4. A minor, or *submetallic* tinkling, having no musical resonance, may be produced by slight impulses given to the air in the cavity, such as the breaking of bubbles of mucus at orifices above the surface of the liquid.

5. Amphoric resonance is produced by reverberations of the air in a vibrating cavity, without sonific impulse of the liquid. The same is true of metallic modifications of the voice, and of the cough when there is no tinkling. Metallic percussion seems also to depend upon the vibrations of air independently of liquid, and may be produced in some other cases when we strike upon a tense cavity in which a certain quantity of air is confined.

Boston, Sept. 1838.

ART. VI. *Surgical Clinic*. By N. R. SMITH, M.D., Professor of the Theory and Practice of Medicine, in Transylvania University.

CASE I. *Extirpation of the Parotid Gland*.—August 21, 1835, my friend, Dr. T. E. Bond, Sen., requested me to examine a tumor on the face of Miss Bryan, the daughter of Charles Bryan of Baltimore county. It was located between the left ear and the angle of the jaw, in the precise situation of the parotid gland. It presented an abrupt eminence, something in form like a pointing phlegmon—its base not broad. The tumour was hard, occasionally affected with lancinating pains, and tender to the touch. It very much disfigured the patient, and was stated to be increasing in a degree which caused much anxiety.

Both myself and Dr. Bond were inclined to regard the tumour as one which had originated in a lymphatic ganglion lying on the parotid, although we could not well define its base and extent in the direction of the zygomatic fossa. The history of the case in our view justified an operation for the removal of the part diseased, and I accordingly undertook it.

In the presence of several of my pupils, August 25, 1836, I commenced the operation by making a vertical incision from the zygoma to the angle of the jaw; and, deepening it, laid bare the external aspect of the tumour. On endeavouring to define its lateral limits with the knife, I soon discovered that I had to deal with the entire parotid, and proceeded accordingly. The disease affecting the organ had, in regard to consistence and form, distinguished itself from the surrounding parts. It was much more globular than the

healthy gland—had a more distinct envelop of cellular tissue—and had receded in a degree from its confined situation. Penetrating the posterior part of the tumour near its surface, I soon traced out the facial nerve (portio dura) and separated it from the tumour to a considerable extent. I then doubted whether to attempt to disengage the tumour from beneath the nerve, or to divide the latter. Anticipating great embarrassment in the execution of the first plan, and fearing that serious irritation would be necessarily inflicted upon the nerve, I at once divided it. Paralysis of the muscles of the face on that side instantly resulted.

I then cautiously proceeded with the dissection of the tumour. Penetrating between its diseased lobules on every side were occasional bands of cellular tissue. These I divided with great caution, as I expected to find some of them involving the branches of the external carotid, which emanate from the parotid. Thrusting the index of my left hand beneath the tumour, I made them successively turn over its extremity; and carefully feeling for pulsation, I effected their division, sometimes with the knife, but more generally with a very narrow probe-pointed bistoury. When I felt pulsation I endeavoured to effect the laceration of the band with the finger, or the handle of a scalpel. Thus I proceeded till I had insulated the tumour with the exception of a single band attaching the upper and posterior part of the diseased mass to the deep temporal region. Occasionally there had sprung a small artery, but not furnishing sufficient blood to embarrass the operation. I now divided the last band which attached the tumour, and a single artery sprung with considerable impetuosity. This I secured without difficulty with the tenaculum. Had I felt any considerable pulsation in it I should have included the whole band in a ligature before effecting its separation.

The tumour being now removed, I explored the cavity from which it had been taken. This extended quite to the styloid process; and the muscles arising from that point were seen with perfect distinctness. Not a vestige of any thing presenting the appearance of the parotid gland could be seen in the space usually occupied by it. Probably, however, that small process of the gland which extends forward on the cheek, termed *socia parotidis*, was left; but in the incision along the anterior border of the tumour I did not distinguish it or the duct of Steno. The tumour is in my possession, and is of the size of a very large hickory nut.

The patient bore the operation with much fortitude. The wound was dressed lightly with lint and bandage. Inflammation to some extent arose, and some embarrassment of deglutition and respiration resulted. A common cataplasm was applied; and, on the occurrence of suppuration the unpleasant symptoms abated. Cicatrization was effected in a few days, and all morbid sufferance ceased. The face, however, remained paralysed; and the eye suffered in some degree from the inability of the patient to close it. I saw this young lady some months after her recovery; and, at that time, the

cicatrix remained healthy, and the paralysis of the face had decidedly diminished.

The extirpation of the gland in this case I accomplished with much greater ease than I had expected. The small amount of hæmorrhage cannot fail to strike the reader with some surprise. It is to be accounted for, in my opinion, by presuming the obliteration of many of the vessels by the enlargement and morbid hardness of the gland; also by its displacement, in consequence of which traction was made on the vessels issuing from it.

This case furnishes facts which will aid to reconcile the opinions of anatomists and surgeons relative to the feasibility of the extirpation of this gland. The former, even at the present day, observing the extreme difficulty of dissecting the healthy gland, often declare its removal impossible. Surgeons, however, report numerous cases in which the operation has been unquestionably performed. I have seen the operation performed with success by Professor M'Clellan of Philadelphia; and in that case also the hæmorrhage was trifling, and from but a single vessel. The gland has also been removed by the late Professor Davidge of this city—by the late Professor N. Smith—by Professor Dudley, and, I believe, by several others in this country, as well as by numerous surgeons abroad.

The feasibility of the operation in these cases is, in my opinion, to be explained by the facts furnished in the above instance. The tumor in its growth had assumed a harder consistence than natural, without having imparted disease to the surrounding parts. It was therefore better defined than the healthy organ. It had also become spheroidal; and, from its size and hardness had necessarily receded from its confined situation. Its extirpation was therefore undoubtedly far easier than would be that of a healthy gland; and, because of the obliteration of the vessels from causes named above, attended with far less hæmorrhage.

CASE II. *Division of the Tendo Achillis for the cure of Club Foot.*—March 21, 1835, I was called to the infant child of the Reverend Mr. Hamner of this city. The little patient, then but three weeks of age, was born with the distortion of the left foot, termed "club-foot;" or in this instance with more propriety termed "pes equina," or "horse-foot." The inclination of the foot inward was very strong, and with difficulty resisted by the hand. When it was firmly seized and turned outwards, so as in some measure to assume its natural attitude, the tendo Achillis became exceedingly tense; and, in spite of every effort to prevent it, the foot would become extended on the leg by the resistance of the tendon, so that the instep was nearly in a line with the shin. It could be flexed, however, in a greater degree when the leg was flexed on the thigh, showing clearly that there existed nothing to hinder flexion but the resistance of the tendon.

The case had been previously seen by my friend Dr. M. Baer, who gave some judicious directions in regard to the mechanical management of the

case. On its coming into my hands I also resorted to the usual mechanism employed in such cases. I directed persevering efforts to be made with the hand to flex the foot and thus elongate the tendon, and also to abduct it. I even made a plaster cast of the limb, holding it as firmly as possible in a natural attitude; and, on the cast thus procured, shaped a splint, which was worn for a considerable time. I had about this time seen, in a number of Professor Gedding's Archives, an account of Stromeyer's operation of dividing the tendo Achillis, and suggested the operation to the parents; but as the expedient was new, and had never then been performed in this country, it was determined not to resort to it till other means failed.

Those means, however, did fail, and I declared for the operation. The father being a gentleman of superior intelligence and decision, I made him fully acquainted with my views. On carefully examining the member he became satisfied that the resistance to flexion and permanent abduction of the foot was wholly on the part of the tendon, and promptly acquiesced in the proposition.

I performed the operation, August 3, 1835, in a method I believe somewhat different from the mode usually adopted. The leg being firmly held, the foot was strongly abducted and flexed so as to render the tendon very tense. I then, with my finger and thumb of the left hand, rendered the integuments tense over the tendon, and with a scalpel divided them down to the tendon, and to the extent of an inch. One stroke of the knife completely exposed the silvery surface of the tendon; and then, drawing the integuments firmly to each side, I easily insinuated a small director beneath it, and with the greatest care carried it through. Placing the point of the knife in the groove of the director, the edge presenting upward, I caused it to glide along the groove, and divided the tendon at one stroke. Its extremities sprung apart like those of a divided bowstring, and the foot, instantly yielding to the force which was being exercised upon it, became flexed at once. Nor did it require now the least force to maintain the abduction.

I now immediately closed the wound with adhesive strips and a roller, using no other support whatever, not doubting that continuity would be established notwithstanding some motion, though Stromeyer and others have deemed it necessary to use a splint or boot.

I dressed the wound on the fourth day, and found that union had taken place by the first intention. The child scarcely suffered a moment's pain after the operation—not even during the dressings; and the parts were soon restored to a state of soundness. I now found that the tendons which antagonised the tendo Achillis were rapidly restoring the rectitude of the foot. I therefore left the case entirely to the natural action of the muscles. When the child began to walk, which she did at the usual period, I had the satisfaction to see her tread fairly and firmly on the sole, there being no appearance of deformity except that the foot was a little shorter than the other, and that there was a little inclination of the toe inward. To correct this last,

I subsequently caused the patient to wear a spring boot. The following note, which I have this day received from my friend Mr. Hamner, will show the present condition of the foot.

DR. N. R. SMITH. My dear sir—In reply to your note relative to the operation on my little daughter three years since, it affords me great pleasure to state that the benefit derived from the operation is complete. She walks without the slightest appearance of a limp, and seems to have equal strength and agility in the limb on which the operation was performed as in the other. The only indication which appears, of any thing like malposition having afflicted her, is a very slight inclination of the toes inward, which, however, does not inconvenience her at all.

Yours, with a deep sense of indebtedness to your skill and kindness,

JAMES G. HAMNER.

Baltimore, September 12th, 1838.

I have thus long delayed reporting the above case in order that its result might be fully determined. I have since operated in another case which is doing well, and which I shall report at a future period.

CASE III. *Paracentesis Vesicæ for relief of suppression caused by rupture of the Urethra*. November 27, 1837, I was requested by my friend, Dr. M. Baer, to see the child of Mrs. Hardy, of Pratt street, a lad of 7 years. He had that day fallen astride upon the margin of an open barrel, and had received a severe contusion in the perinæum by the sharp margin of the staves. The injury was directly beneath the arch of the pubis, and, consequently, upon that part of the urethra where the membranous portion penetrates the bulb. The skin had suffered no wound, but the extravasation and hard tumefaction which had promptly resulted, gave evidence that parts beneath the integuments had been divided. A more distressing and conclusive proof of this had occurred soon after the injury;—complete suppression of urine had resulted, though the desire to void it was urgent, and the efforts frequently repeated. Dr. Baer first saw the case, not long after the occurrence of the accident, and attempted to pass the catheter. The nature of the injury, however, had rendered his efforts unavailing. On my being called, I also attempted the introduction of a catheter; but, although I used instruments varying in size and form, and practised gently every variety of manipulation which promised success, I failed to reach the bladder. Blood flowed from the instrument whenever it reached the part, and its point appeared then to be engaged in a lacerated wound. The condition of things was plain enough;—the urethra had been divided—blood had accumulated in the wound, and this had been followed by urine, which, being injected with some force into the parts, had been imbibed by the cellular tissue.

As but a few hours had elapsed from the time of the injury, and as the bladder was not suffering a severe degree of distension, we resolved to delay further manual interference, and resort to measures calculated to obviate

irritation and inflammation. Venesection was performed, an aperient and warm fomentation directed, and, at night, an anodyne.

We saw the patient next morning, and rather unexpectedly found him partially relieved. Urine had been, from time to time, voided in small quantities and slowly; the bladder was rather less distended than the evening before, and the febrile excitement was not excessive. We, therefore, still delayed, after having made another ineffectual attempt to pass the catheter.

The next day, 29th, owing to indisposition, I did not see the patient, and the morning following Dr. Baer called to inform me that the suppression had become complete, and that the symptoms had assumed so urgent a character as to demand immediate manual interference. I visited him immediately, but Dr. B. being occupied with an important engagement, could not accompany me. I found the patient in a most perilous and distressing extremity. The tumid bladder was distinctly felt above the pubes, and was hard; there existed high febrile excitement and extreme restlessness, and, at intervals of fifteen or twenty minutes, violent spasms of the bladder and abdominal muscles occurred, during which there was an agony of suffering. On introducing the finger into the rectum, I distinctly felt the bas-fond of the bladder pressing firmly upon that intestine and downward upon the perinæum. The case had now manifestly reached a point which brooked no further delay, and I again unsuccessfully attempted the passage of a catheter.

There was now no alternative but an operation; but I hesitated for a moment whether to cut open the lacerated urethra, search for the wound in that duct, and thus introduce the catheter, or to perform the operation of tapping the bladder without regard to the injured urethra. Had there been any considerable tumor in the perinæum and scrotum, indicating the lodgement there of blood and urine in quantity, and that giving rise to high inflammation, I should have incised the part immediately. But the tumor was circumscribed and small, nor was any fluctuation to be discovered; no circumstance, indeed, which demanded an incision but the suppression of urine, and this was in part occasioned by the irritation of the retaining muscles. The facility with which I felt the tumor of the bladder from the rectum pressing into the perinæum, and the small depth of parts in that region in a boy of that age, suggested the tapping of the bladder through that part, a method which in all cases is preferred by some eminent surgeons. The operation of cutting for the urethra would have been a much more difficult process, and would have required assistance which I could not at that moment command. I was so apprehensive of mischief from further delay that I resolved to proceed at once, with no other aid but that of the mother.

I placed the patient on his back upon the margin of the bed; his mother, a woman of resolution, held him firmly; I introduced the left index into the rectum, and, seizing a small, straight bistoury, I pierced the integuments at the centre of the line in which the incision is made in lithotomy. I then,

giving the instrument a general guidance with the finger in the rectum, struck for the angular space between the crus penis and bulb of the urethra, and conveying the bistoury along the left side of the membranous portion of the urethra, endeavored to strike the bladder just exterior to the prostate gland. I then withdrew the bistoury and immediately conveyed along the wound a small gum-elastic catheter into the bladder. There instantly occurred a free gush of urine from the catheter, and it continued to flow till the tumor of the bladder subsided. The sufferings of the patient immediately ceased. Having ascertained that the instrument was so firmly embraced in the wound as that there was no danger of its escape, I left him for the night.

The next morning Dr. Baer saw him with me. We found him comparatively comfortable—urine flowed freely by the catheter—the local irritation and constitutional symptoms much abated—in all respects indeed doing well.

The next day, December 1st, his condition was the same;—also on the following day. December 3d, the local swelling and tenderness having much abated, I again gently attempted the passage of a silver catheter, and fortunately succeeded. I presume that, during the perfect repose which the injured urethra enjoyed during the presence of the catheter in the wound, absorption of the effused fluids had taken place, and the continuity of the parts had been partially restored. I now withdrew the catheter from the wound, and secured with tapes that which I had introduced along the urethra.

During the following night the patient was exceedingly restless; rendered so partly, perhaps, by the presence of the silver catheter in the bladder. Toward morning, though carefully watched, he seized the instrument and disengaged it from the bladder. After the lapse of a little time he made an ineffectual effort to pass water, and immediately all the unpleasant symptoms of suppression returned. He suffered the most urgent desire to void urine, together with spasmodic throes, for three or four hours, when suddenly the flow by the urethra was restored. I did not see him till morning, not having been informed of his condition, but I then found him entirely relieved. He continued from this time to void his urine with but little impediment. The wound in the perinæum healed promptly, and in a few days the patient was restored to health.

Appended to a case of "Laceration of the Urethra," published in No. XXXVIII of this Journal, are several interesting cases of laceration of the urethra, adduced by the editor from various sources, for the purpose of illustrating the treatment of such injuries. In those instances incisions were with great propriety made into the injured parts, the operator having a double object in view—the evacuation of extravasated fluids, and the relief of suppression. But the circumstances in the case which I have related were somewhat different, and, in my opinion, justify a different mode of practice. The editor justly remarks in the article alluded to, that the operation of incising the injured parts, "is far preferable to the puncture of the bladder either

above the pubis or from the rectum." But is it preferable in a child, and in a case unaccompanied with much effusion, to the puncture of the bladder through the perinæum? The parts to be traversed by the knife are not voluminous in a boy, nor are they so vascular and sensitive as in the adult; the instrument is easily guided by the finger in the rectum; and the bladder, when thus distended, is so fair an object, and so distinctly felt, that one acquainted with the anatomy of the parts can scarcely fail to attain it without inflicting injury upon the surrounding parts. Under ordinary circumstances, however, instead of transfixing all the parts at once, after the method of Foubert, I should first make an external incision as for lithotomy, and complete the operation with the trochar, as the process is modified by Sabatier.

The objections which Velpeau makes to this operation on the adult, viz., that sometimes the ureter or seminal vesicle may be hurt—sometimes the instrument miss the bladder and penetrate forward between it and the pubes, or posteriorly into the cul-de-sac of the peritoneum, certainly do not obtain with equal force in operating on boys. The volume of the parts to be traversed is relatively far less, and the prostate and seminal vesicle are relatively less developed. I cheerfully admit, however, that in many cases of even young subjects, the operation of cutting for and piercing the urethra anterior to the prostate, the operation which Velpeau and Sir A. Cooper would substitute whenever practicable, will often be preferable to that of tapping. But in all cases in which the puncture of the bladder becomes necessary in young subjects, I should decidedly prefer the puncture through the perinæum to that above the pubes, or that from the rectum.

CASE IV. Amputation of the Thigh during Progressive Gangrene, resulting from Fracture and the Pressure of a Displaced Fragment of the Femur on the great artery and vein.—August 31, 1837. I was called by an intelligent medical friend to see, with him and another medical attendant, in Pratt street near Hanover, a case of recent fracture of the thigh, in which gangrene of the leg had supervened. The patient was a youth 17 years of age, of good constitution, but probably, at the time of the injury, somewhat under the influence of malaria, as he came from a sickly district on the eastern shore of Maryland. Being on board a bay craft he suffered a fracture of the leg near the knee, by the fall of a bag of merchandize which was being removed from the vessel.

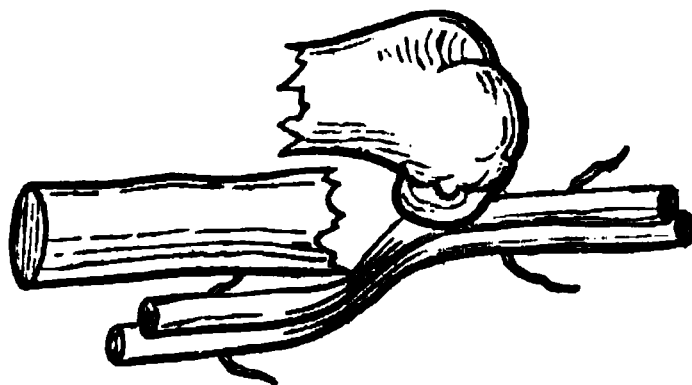
I saw him on the fifth day from that of the injury. The limb was then reposing on pillows, in the semiflexed position, not having been placed in splints. The whole foot and leg, to within three inches of the knee, were in a state of complete mortification, the parts being tumid, crepitous when pressed, covered with dark vesications, cold and completely insensible. A belt of gangrenous inflammation existed below the knee; but nothing like a line of demarkation existed between the dead and living parts. There was considerable tumefaction at the place of fracture; but the action above the knee was neither excessive nor unhealthy. His pulse was firm and good,

(about 100), the nervous system but little disturbed, and the stomach performing its offices as well as in ordinary cases of fracture.

Taking into consideration the condition of the limb above the knee, and the favourable state of the system, we came to the conclusion that the mortification must have resulted from some local cause; probably some lesion inflicted upon the great vessels and nerve, and although gangrene was still progressing, we unanimously resolved that amputation, immediately above the fracture, should be performed. I amputated the limb within two hours after I first saw him, and the operation was endured by the patient with fortitude, and with but little prostration. The stump was carefully closed in a manner to favour union by the first intention. Further history of the case is unnecessary, except to say that healthy action was instituted in the stump, and the patient had a rapid recovery.

But that which was chiefly interesting in the case, was the condition of the parts at the place of fracture, ascertained by dissection. The member having been disturbed as little as possible, I made a vertical incision above the patella, down upon the bone, and quickly discovered that the fracture was within about two inches and a quarter of the extremity of the bone, and that it was perfectly transverse. It was also seen, that the upper fragment was thrust into the ham, and that it was lodged directly behind the lower fragment, overlapping it about three-fourths of an inch.

Reversing the member, we carefully exposed the soft parts in the popliteal region. Here the source of mischief was speedily revealed. In the midst of effused blood and serum were found the femoral artery and vein thrust backward, and tensely drawn across the sharp posterior margin of the superior fragment, in such a manner that it was perfectly obvious that the circulation in both vessels must have been completely interrupted. It will be remembered, that the bone at this place is large, as it is there expanding to form the condyles. The posterior surface is broad and flat, and consequently the margin, over which the vessels were drawn, was long and straight. The accompanying sketch will illustrate the relations of the parts. The preparation I have preserved.



There are surgeons of eminence who still advocate the practice of delaying to reduce fractures till local irritation has abated. Such was the practice inculcated by the late Professor of Anatomy in the University of Maryland, but the facts furnished by the above case, will strongly gainsay such a precept.

Baltimore, Sept. 1838.

ART. VII. *Further Remarks on the Action of Presence.* By JOHN W. DRAPER, M. D., Professor of Chemistry, and Physiology, Hampden Sydney College, Virginia.

1. In the papers, which I have communicated to this Journal during the past year, I have endeavored to unfold those parts of chemistry and its collateral sciences, which seem to have a bearing on the phenomena of life. Returning now to the study of the action of presence, it will be my object to examine successively the different cases of it, previous to entering on a detailed experimental investigation of the leading facts.

2. Some physicians, not well informed of the processes of philosophical reasoning, take umbrage at any attempt to bring physiology under the dominion of physical science. As they regard life, as a principle *sui generis*, and give to it that same kind of existence, that we impute to light, heat, or electricity, they do not hesitate to assign to it properties and modes of action, often irreconcilable with themselves, and marvellous in the extreme. As if organic structures showed no adaptation of *the means to the end*, and no relation of *cause and effect*; the aplanatic adjustment of the eyeball; the configuration of the bony skeleton, cast with mathematical fidelity to sustain in one part the effect of steady pressures without change, or in another, to encounter without peril a sudden shock; the cellular structure of the lungs, and the thin membrane which parts the blood from the air, these and a thousand other things are lost upon them.

3. There are others, who impute every phenomenon of vital action to a *nervous* fluid, the machinery of which they pretend to explain. Such functions as respiration and secretion, as well as the more exalted functions, which place us in relation with the external world, are intimately connected with this power. Each gland in the body and each tissue, being connected with the system along which this fluid moves, receives from it an impress which fits it for the performance of its accustomed duty. Thin nervous webs ramify in every direction, being the channels along which the dynamic fluid passes. In the lungs, it accomplishes the arterIALIZATION of the blood; in the kidneys it keeps up the acidifying process, which ends in the elimination of acids of sulphur, phosphorus, and nitrogen; beyond this, by freely passing from part to part, it maintains the sympathies that ought to exist in complex organisations.

4. As is the case in most medical theories, a wrong process of reasoning is here adopted. The existence of an agent is assumed, and effects are incorrectly adapted to it. The Baconian philosophy is here inverted, with a success that is no unusual concomitant, of the synthesis of causes.

5. That a powerful and active agent, of some kind, resides in the nervous system, there is little doubt; that it exerts a direct control over those chemical affinities, which the particles of an organic body would hasten to

satisfy, is also unquestionable; but that it is the sole and entire cause of the diversified effects of vitality, has never been proved. How is it, that from the deep sleep of winter, trees and plants awake at the coming of spring, and put forth their leaves and their flowers, and then sink again into their annual slumber? They have no nervous expansions, no sentient cords, no ganglionic knots. Yet, many of the secretions eliminated by animal tissues, are also eliminated in the nerveless glands; the wax that is evolved by the ceruminous glands of the ear, does not greatly differ from that which enters into the composition of the pollen of flowers; the sugar, that is secreted by the diabetic kidney, has its analogue in the sugar of grapes, and may even be made artificially, by the slow action of dilute sulphuric acid, at a certain temperature, on a variety of different bodies. It is true, that the process of arterialisation may depend on the ramifications of the par vagum, interlacing among the bronchial cells; but is not a like process accomplished in the leaves of plants, without the intervention of any nerve of respiration? Without a motory or a sentient apparatus are they not equally sensible of the deleterious effects of narcotic poisons, and die when exposed to an atmosphere of irrespirable gas?

6. Yet we must not infer because the botanist has failed to detect nerves in these bodies, that they accomplish all their different changes, evolve their varied tints, and form their perfumes, by processes which simply depend on the conditions of their organic structure. That it is in virtue of the number, shape, or arrangement, of the pores of their leaves, or some inherent quality in their *chromule verte* that they are possessed of the attribute of breathing, an inverted breathing which exactly compensates in its results, for the breathing of animals, and maintains the constitution of the atmosphere at all times the same. In animals, the nervous influence emanating from within, produces through the agency of the phrenic nerve, the bellows motion of the respiratory machine, and then the chemical change which has to occur, *may* be brought about by the action of the par vagum; but in a plant the passing wind and the trembling of the leaf, perpetually expose fresh surfaces to the air, and the rays of the sun impinging on the porous organ, give it that chemical relation that enables it to discharge the function intended.

7. Does then the sunlight act, as it were, as an external nervous agent in plants? Is it for this, that in tropical regions under a vertical ray, the most fragrant perfumes are formed, and vegetation exists in the utmost luxuriance? In the types of animals and plants, respectively, there seems to be an inverted location of the organs, the lacteals of the former originating within, and the roots of the latter without; the respiratory mechanism of the one closed up, and the other freely exposed to the air; their nervous systems may follow the same law, and an irritant be supplied to the one from within, whilst to the other it comes from without.

8. To this it may be objected, that, though the effects produced by the im-

pinging of the solar ray upon a leaf, and the nervous influence exerted upon the lung, bear a striking analogy to each other, yet the agents themselves have nothing in common. It has been remarked, heretofore in these papers, that we have an exact knowledge, of the nature of the fluid, that passes along some systems of the nerves. The defensive organ of the torpedo, and some other fishes, which owes its power unquestionably to a large supply of a remarkable class of nerves, reveals to us the circumstance that along some systems, the electric fluid freely passes. Torpedinal electricity is evolved, in the broken circuit, in the form of a spark which passes with an audible report; when made to move along a metallic helix, it magnetises an included needle of steel, it causes the usual disturbance of the galvanometer, and hence exerts the tangential electro-magnetic force, it gives rise to the Faradian currents, under the proper conditions, and exhibits attractions and repulsions on suspended gold leaves. The origin of these electrical currents, can be traced immediately to a certain part of the brain, for its first lobes may be destroyed without the discharge disappearing, and the same occurs with the third, but if these be left whole and the fourth be destroyed, then the animal ceases to have any more electrical power. Now the electrical organ is also the encephalic organ of respiration, and on injuring it a corresponding injury to the opercula of one or both sides is the result. It also appears, that the amount of electricity evolved, bears some relation to the amount of gas consumed in respiration. (Matteucci, *Compte Rendus*, December, 1837.)

9. An opinion has been expressed, in the last Number of this Journal, that there is not any known instance of change of chemical composition being brought about by the simple agency of mechanical structure; in other words, that tissues and glands, do not act as mere strainers or sieves, evolving new substances by any peculiarity in the adaptation of their parts. It might from hence be supposed, that we should be reduced to the necessity of regarding nervous influence, as the prime mover of all the functions of organic life, but if in vegetables the light of the sun or the impress of heat, does not supply the place of this obscure power, great difficulty would arise in understanding how the various products, evolved by some kinds of chemical action, in the vegetable kingdom, originate. No nervous system is present, and if no external agent be supposed to act, we are reduced to the last hypothesis, that the changes occurring under these conditions, are the result of a catalytic action—an action of presence.

10. Besides the four leading elements, oxygen, hydrogen, nitrogen and carbon, which form the basis of most living bodies, and are their chief ingredients, minute portions of other elementary bodies are occasionally present, such as silica, iron, lime, potash, &c. Until lately, these have been looked upon as extraneous matters, often existing in plants from incompetency of the spongioles, or absorbing apparatus to exclude them in the process of absorption. Accurate researches have however proved, that a great degree

of regularity is observed in the deposition of these materials, and that they constitute as it were a true skeleton; thus, lime forms the skeleton of the calyx of the mallow, and one of the salts of potash the skeleton of the petals of the rose. The term skeleton is not here used in its anatomical sense, as implying a rigid basis, upon which a soft structure is raised, the introduction of a saline material of the character of the potash salts, not possessing that degree of rigidity necessary to a mechanical frame work, would obviously be inapplicable; nor would the petals of the rose or geranium receive any support from a foundation of this sort. Other objects must therefore be inferred for the elaborate introduction of these bodies, and their regular location in specific parts of plants.

11. It is remarkable, what powerful physical forces are called into action, by the minutest portion of elementary atoms. Quicksilver, can have its electrical relations entirely reversed, by the admixture of less than a millionth part of its weight, of the more energetic electropositive metals. In this way, a force may be generated, vastly more intense than that exercised by the whole mass of the earth, under the form of gravitation, and motions executed, which demand the most decided powers for their accomplishment. It happens, that several of those metals and compounds, which are already recognised as developing these extraordinary agencies, are also detected forming what is called the skeleton of plants. It becomes, therefore, highly probable, that the functions they discharge, are of that kind, now distinguished by chemists as actions of presence.

12. I propose now to go into a review of the different cases of this kind of action, which have been reported, premising that in many of the cases referred to, we may be able hereafter to impute the result to more ordinary agents.

(a) The most prominent of these phenomena, are produced by the action of metals, either in the state of powder, wire, or foil. It seems necessary that the surface should be absolutely clean and metallic, (that is, not covered with a film of oxide:) the products of action being very diversified, often forming a suite of compounds, identical to those of the organic kingdom, the change being accompanied with thermal changes, which are sometimes so energetic, as to exhibit a true combustion, and a vivid flame; and sometimes so moderated, that only a pale and lambent light appears, as is the case, in the conversion of the different compounds of etherine, into more highly oxydized bodies. The first example of this description, was given by Sir H. Davy, who found in his researches on the nature of flame, that if a coil of platina wire be placed in a vessel containing ether, the atmosphere having free ingress, at a temperature much below visible redness, the vapor rising from the ether had its constitution charged, in passing by the wire; a pale blue flame perceptible in the dark, announcing the progress of oxydation. And the temperature of the wire rapidly rose, it soon became red and finally white hot.

(b) It was next found that platina when in the state of a very fine powder, if moistened with alcohol containing water, would cause those compounds to unite, in such a way as to generate acetic acid. The metal itself in no wise being affected.

(c) The same metal, when in the state of a sponge, was shown by Doberainer, to have the power of firing at common temperatures, and even at the freezing point, a stream of hydrogen gas directed upon it; causing the instantaneous production of water, by the union of its gaseous elements. It has been more recently discovered, that a granular or spongy state, is not essential to this action, pieces of platina foil, provided they be perfectly clean, and also pieces of wire of considerable dimensions, will slowly promote the union of oxygen, and hydrogen. It does not, therefore, depend on the absorbing or condensing action of a porous mass, as the earlier experimenters imagined. Nor is the influence of this metal only confined to these two gases, several others are caused to unite by it, formic acid is converted into carbonic acid, and under its agency metallic osmium combines with oxygen, producing osmic acid. Even if the surface of the metal should be moist, the usual effect is produced, though it requires a longer period of time for its completion. An exceedingly small quantity of platinum, will in this way condense an unlimited amount of the mixed gases. Doberainer found, that the thinnest film precipitated on a glass tube, from a solution of chloride of platinum by means of a rod of zinc, would cause the oxydation of hydrogen placed in it: but that some liquids, as nitric acid and ammonia, would totally hinder this action.

(d) It is an observation of Dulong and Thenard, that this property is by no means peculiar to platinum, but that gold, silver, glass, &c., at certain temperatures, will do the same thing. In a paper published by Mr. Miller, in the *Annals of Philosophy*; a paper, which seems to have been strangely overlooked, some beautiful results of this kind are given. Charcoal, made by igniting bones, or by the destructive distillation of gum arabic, tragacanth, or myrrh, would replace the coil of wire in Davy's experiment, and give rise to the acidification of ether. The different metals, palladium, gold, silver, copper, iron, steel, lead, brass, and even watch spring, were found to be endued with a like power, a lambent blue flame playing round them. The tip of a glass rod, being warmed and then held over ether, emits from its whole surface the blue flame, and acetic acid is formed in abundance. A fragment of lime used in the manner described by Mr. Miller, gives rise as I have proved, to an extremely beautiful experiment; the portions of it next to the ether emit a pale white phosphorescence. And these results are not obtained by employing ether, or alcohol only; camphor, nitrous ether, benzoic acid, oil of turpentine, and the essential oils of amber, aniseed, carraway, cinnamon, cloves, juniper, lavender, origanum, nutmeg, savine, rosemary, and peppermint, and gaseous mixtures of hydrogen, or carburetted

hydrogen, with atmospheric air, and oxygen gas, undergo similar modifications.

(e) The action of copper, in promoting by its presence the oxydation of carbon, and consequent evolution of carbonic acid gas, is well exhibited, as is a matter of common experience, by a green wax taper; this kind of taper, is coloured by verdigris, the copper of which undergoes reduction on the wick. If such a taper be lighted, and the flame blown out, so as to leave the wick glowing, it will continue in that state, until all the wax is consumed. Platina, will also do the same thing, as may be proved by burning the ammoniacal salt of platinum, with cork raspings, and then examining its condition as to combustibility.

(f) Probably along with these, those pyrophoric bodies should be classed, which suddenly ignite and consume, on being exposed to the air. Chemists have long ago noticed, that many of the metals when reduced at a low temperature by hydrogen gas, fulfil this condition, and what is rather remarkable, they lose this property by being heated in an atmosphere of carbonic acid, but recover it again on a fresh exposure to hydrogen.

(g) The inflammation of phosphorus, in a partial vacuum, by the contact of such bodies as fluor spar, chalk, common salt, silica, lime, &c., which has been shown to take place by Professor A. D. Bache, is also to be referred to this class.

(h) It is not acidification only, which can by these processes be brought about, even the more energetic alkaline bodies may thus be produced. Under the influence of platina, nitric oxide, and hydrogen gas, react on each other rapidly, and produce ammonia.

(i) Indications of a series of phenomena, which contrast strongly with those that have been just described, also exist. Whilst it is found that a pair of platina wires, which have decomposed water by transmitting through it a current of voltaic electricity, silently cause the reunion of the gaseous elements which are left exposed to their influence; it is also known, that wires of certain metals as zinc, iron, or gold, when they have once begun to decompose water by the agency of the pile, will continue to do so, though their connection with it may be broken. Does this indicate a polarization of their particles, and of the particles of the electrolyte they are decomposing, or does it point out some condition of surface, analagous to that which is required in other metals, to produce an exactly opposite result?

(k) Under this head it may also be observed, that a great variety of ordinary decompositions, will probably hereafter be traced to a connection with this action of presence. It is well known, that many compounds may be passed through red hot tubes, made of certain substances, but if the same experiment is tried even at lower temperatures, with tubes of another description, decomposition is readily effected. If ammonia be driven through a red hot iron tube, it separates readily into its constituent elements, but if

the trial is made with a glass tube, the gas will pass at much higher temperature, undergoing hardly any change.

(*l*) Mr. Talbot, has described in the London and Edinburgh Journal of Science, (August, 1835,) an experiment which bears some relation to that described at (*d*). Dip a piece of paper in a solution of muriate of lime, wipe off the superfluous fluid, leaving the paper a little moist. Cut a strip of it, and hold the extremity in the flame of a spirit lamp. After a minute or two, the carbonaceous matter of the paper will be dissipated, and the lime will alone remain, in the form of a perfectly white minutely divided network. This will soon become very vividly ignited, and emit a bluish white light. When the incandescence has become brilliant, it remains so for any length of time, unattended and without diminution, as long as the lamp is supplied with alcohol. Now, the chief thing that merits observation, is that the original weight of the lime, is only a fraction of a grain, and no diminution is perceived at the end of the experiment. It is surely unnecessary to advance any farther argument to prove, that the light is not really emitted by the lime in the manner in which a candle emits light, by the combustion of its particles, but that it acts in a wholly different manner. In short, we see that the mere *presence* of the lime in a heated state, is the cause of the light.

Mr. Talbot adds, in order to know to what degree the luminosity of a flame might be increased, by the presence of lime, I made the following experiment. A flame of alcohol, was gradually diminished as much as possible, by reducing the wick to a single thread, and by other contrivances. In this state, when the minimum of combustion was attained, the flame was reduced nearly to the size of a pea, and it gave a very faint blue light. When placed in a dark room, the flame itself was visible, but nothing could be seen by its light, not even any part of the lamp itself. A particle of lime was then placed in the flame, it immediately became incandescent, and light enough was emitted to tell the hour on a watch, at the distance of several yards. In this experiment, I have no means of judging, in what proportion the light was augmented, but considering the facts above stated, it could not have been less than several hundred times.

(*m*) It may perhaps be doubtful, whether the effect noticed by Ersted, of the evolution of gas from a fluid, ought to be classified with those now under consideration. He states, that the disengagement of a gas never takes place in a fluid, except it be in contact with some solid body. Chemists, are well aware of the difficulty of distilling sulphuric acid in glass vessels, that the vapour rises with a kind of explosive action, endangering the vessels, and that this misfortune is readily averted, by throwing into the liquid at the commencement of the operation, some pieces of platina foil. The same observation applies to the distillation of spirits of wine, which is accomplished in the best way by the addition of a few pieces of cork,

or metallic fringe. Ersted states, that he introduced ten pounds of brass wire, one fifth of a line in diameter, loosely rolled up, into a distillatory vessel, containing about ten pints of brandy, the result was, that seven measures of the brandy distilled over, with a heat which, without the wire, was capable of sending over only four measures. This observation is extremely important, as respects the boiling point of fluids; it has been known for some time, that in a vessel of glass, water would not boil until it had reached 214° Fahrenheit, except a few metallic filings were thrown into the liquid, and then the ebullition goes on rapidly at 212° Fahrenheit. Some remarkable results of this kind are given by Dr. Bostock, who found that it was possible to heat ether, up to 175° Fahrenheit, without its boiling; whereas, this should have taken place at 102° Fahrenheit, but if whilst it was in this state, a thermometer or cold piece of glass once dipped into it, a stream of bubbles rose and the temperature was immediately lowered—when this effect had ceased, the introduction of a chip of wood, caused the ebullition again to commence; and the temperature to fall; this, in its turn would gradually decline, but a few metallic filings reproduced it, and then the temperature was found to be at the usual boiling point. If when ether is in this way heated up, far beyond its boiling point, pieces of platina foil or iron filings are cast into it, the sudden burst of vapor is so abundant as to amount almost to an explosion, this phenomenon seems to take place in a great variety of liquids, and is exhibited by several saline solutions.

(n) A very remarkable property, has been detected by several philosophers, in iron; and has recently been fully investigated by Professor Schœnlein. This metal, as is well known, possesses a very powerful affinity for oxygen, and will extract it from almost all substances that contain it, not even excepting potash. Yet, powerful as this affinity is, it can be in a moment overcome, and the metal rendered inactive, even in solutions abounding in oxygen. If an iron wire, be dipped into strong nitric acid, it puts on this peculiar inactive state, being no longer acted upon. If such a wire be dipped in nitric acid, of the specific gravity 1.3, and after the action is fairly set up, it be touched under the solution with a piece of platina, the action instantly stops; the iron becoming quite bright, and remaining so any length of time. Dr. Faraday states, that he has kept such a wire in nitric acid, for six months, without its being affected in the least. If, instead of touching the iron whilst under the acid with platina, it had been touched with a piece of zinc, the very reverse would have taken place, and the iron put into a state of violent action: this observation, affords an excellent method of throwing iron alternately into an active or inactive state, by touching it first with one, and then with the other of these metals. Like platina, charcoal will also cause iron to put on this inactive condition. But the most striking result is obtained as follows. Dip a clean iron wire, half an inch deep in nitric acid, so as to render it inactive, and whilst it is in this condition, dip

it into a solution of sulphate of copper, the usual deposit of metallic copper, which ought to take place, does not make its appearance. Withdraw the wire from the copper solution, and disturb it; by causing it to vibrate, or touch it with a pin, or the point of a penknife, or tap it on the table, and the chemical action comes into full play, the copper being instantly deposited, not simultaneously on all parts of the wire, but progressively from one end to the other. It need hardly be stated, that a great deal of ingenuity has been expended, in endeavouring to account for these remarkable facts. The best explanation, appears to be given on the principle that the superficial particles of the iron, are in such a state as respects the oxygen of the body with which they are in contact, as is equivalent to oxydation, without being actually oxydized. Schœnlein reports, that iron whilst in this state—a state of tendency to chemical action, without actually accomplishing it—enjoys certain remarkable electrical properties, that if associated with platina in the form of a battery, it gives rise to a continuous electric current—a current capable of deflecting the magnetic needle, but, unlike the voltaic current, incapable of performing chemical decomposition. It is probable that iron is not the only metal which can assume this remarkable condition—there are indications that copper will do the same thing.

Whatever may be thought of these speculations, it is probable that the phenomena described, are intimately connected with those under consideration, in this paper. If the opinion of Dr. Faraday—and to his opinion on such matters great weight is to be attached—if his opinion be admitted, we obviously are compelled to make a marked inroad upon the doctrine of chemical affinity, as ordinarily understood. How can it be, that an exceedingly active element, can be brought into such a condition, as to satisfy completely its tendency to accomplish a certain union, without that union ever happening? The idea that the *simple association* of elements, can satisfy the operation of powers, which ought to produce their *actual combination*, is a doctrine which most chemists are not prepared to admit; but it is a doctrine, that seems to be gathering facts, and may perhaps soon assume an importance, that will demand investigation.

(o) By some, the method for forming bicarbonate of potash, described recently by Professor Woehler, in Poggendorf's Annals, is referred to an action of presence. He states, that the combination of carbonate of potash, with a second equivalent of carbonic acid, which ordinarily is accomplished with some difficulty, readily succeeds when charcoal is present. He recommends "bi-tartrate of potash to be heated in a covered crucible, and the burnt mass to be moistened with water, put into a receiver, and carbonic acid passed through it. The absorption takes place with such rapidity, that the mass becomes strongly heated, so much so that it is necessary to surround the receiver with cold water, to prevent a reconversion into carbonate of potash; the saturation is complete, when it ceases to give out heat. It is then to be dissolved in the smallest possible quantity of water, at the tem-

perature of 100 to 120° Fahrenheit; and on cooling the filtered solution, the greater part of the bi-carbonate, separates in fine crystals." I do not know however, whether this result is not to be attributed to the powerful absorbent action of porous charcoal, which enables us to bring a large amount of carbonic acid in contact with the potash. The observation is one, which may be of importance in the arts.

(p) The decomposition of sugar, into alcohol and carbonic acid, which takes place with considerable rapidity, at temperatures from 60 to 80° Fahrenheit, under the influence of a variety of azotized substances, is usually considered to be an action of presence. Ordinarily, it is accomplished by gluten, and vegetable albumen, but common glue, isinglass, fibrin, albumen, caseum, and even urine, will also occasion it. A certain quantity of sugar, being dissolved in five, or ten times its weight of water, may be exposed for any time, to a temperature of 75° Fahrenheit, without vinous fermentation setting in; but if in addition, any of these bodies be present, the liquid becomes troubled, an intestine motion ensues, and a large quantity of carbonic acid gas is evolved. The yeast or ferment, which is commonly used to bring on this decomposition, does not appear to have any further action, its elements do not unite with any of the products, but it simply resolves the sugar into carbonic acid and alcohol, by its presence. Thenard states, that one part and a half of yeast will in this way decompose one hundred parts of sugar. It would hence appear, that its action is limited; and accordingly it is found, that if the quantity of yeast or gluten, which is added to a saccharine fluid to cause fermentation is limited, the extent of the change is also limited, and a portion of sugar escapes without decomposition. When instead of a solution of pure sugar, the expressed juices of various fruits are made use of, not only is the change completely brought about, but the ferment produces a large quantity of yeast, derived probably from the gluten or vegetable albumen, of the substance in operation. This in its turn can be used, as is well known, to set up fermentation in other liquors.

It is now understood, that gum and starch, have the same composition; and that crystallized cane sugar is isomeric with pure gum. Cane sugar may be hydrated, and become analogous to the sugar of grapes, by the action of weak vegetable acids. Hence in most fruits, which contain these acids, the sugar exists under the form of grape sugar; and M. Malagutti, from whom this remark is taken, reports; that if the action of these acids on the sugar should continue, water will be again taken from it, and ulmic acid produced. But, should the atmosphere at the same time have access, oxidation will take place, and formic acid be generated.

(q) Under the action of a variety of ferments, and diluted or weak acids, at a temperature below or at the boiling point of water, starch becomes changed into grape sugar. The ripening of fruits, such as the apple, pear, &c., which is attended with a diminution of the free acid they contain, and the conversion of their starch into sugar, is an example of this kind. But

the most important observation, is that for which Kirchoff received a prize from the Russian government—that if starch or lignin, or a great variety of other vegetable bodies, be boiled for a sufficient length of time, with diluted sulphuric acid, they become entirely saccharized; and the sugar so produced, may be crystallized. Probably an intermediate change takes place, the starch being first converted into gum, and the gum into sugar. The acid acts simply by its presence, it does not in any way unite with the other elements, but may be precipitated at the close of the operation, without loss; and the sugar which is produced, exceeds very slightly in weight, the starch originally employed.

(*r*) Again, it has been shown by Mitscherlich, that sulphuric acid diluted to a certain extent, exerts an action of presence on alcohol, for when so diluted as to boil at 284° Fahrenheit, it decomposes that substance into ether and water, which both distil over, together forming an amount equal to that of the alcohol originally employed. It is not, therefore, as some of the theories of etherification would make it appear, an affinity of the acid for water, that is the cause of the change. Other bodies, such as phosphoric acid, can be made use of; and hence this result is by no means due to any peculiar property of sulphuric acid, but is enjoyed in common by many other substances.

(*s*) The fixed alkalies potash and soda, and also several metallic oxides—as the per-oxide of manganese and the oxides of gold, and silver—decompose in virtue of a similar force the bin-oxide of hydrogen, converting it into oxygen gas, and water. This is perhaps the most active instance of catalytic action that is known. If a little oxide of silver, be dropped into bin-oxide of hydrogen, a high temperature results, and oxygen is at once evolved, with a loud detonation; the metallic oxide being at the same time reduced. A variety of bodies produce this effect, many of the metals and their oxides, and some organic bodies—it is remarkable, that fibrin acts very readily, but albumen not at all.

(*t*) Mr. Pelouse, in the *Annales de Chimie* notices the great mobility of the elements of nitro-sulphate of ammonia, and remarks the “stability which the alkalies impart to them, made me think it not improbable that this salt might exhibit phenomena of decomposition of the same class as the singular ones, which M. Thenard observed with the bin-oxide of hydrogen. In fact this is the case; many substances which decompose bin-oxide of hydrogen, without acquiring or losing any thing, also decompose the nitro-sulphates. Spongy platina, oxide of silver, metallic silver, powdered charcoal, and oxide of manganese, produce this effect; the two first mentioned especially, act with extreme rapidity upon the nitro-sulphate of ammonia. This remarkable phenomenon is due, as in the case of the bin-oxide of hydrogen, to an action of presence, and it never produces more than a mere conversion of nitro-sulphate of ammonia, into protoxide of nitrogen and sulphate of ammonia. Oxide of silver is not reduced, for if it be washed after having

caused it to decompose a large quantity of this salt, it afterwards dissolves in nitric acid, without the disengagement of red vapors."

(u) Like the bin-oxide of hydrogen, and nitro-sulphate of ammonia, the bisulphuret of hydrogen may also be decomposed by an action of presence, exerted by the same bodies.

13. We have now enumerated a body of facts, which appear to be intimately connected with the power of producing chemical change, that is exhibited by living structure. In some instances, that power can be directly and unquestionably traced to these catalytic forces. Around the eye of the potatoe, there exists a deposit of diastase, a substance having the same action on starch, that dilute sulphuric acid has at temperatures verging towards 212° Fahrenheit. In virtue of the action of this deposit, the starch contained in the tuber, undergoes such a change, as brings it into the condition of gum, and finally saccharizes it. Now, as I observed a year ago, in some "Remarks on the Action of Presence," inserted in this Journal, it is at once curious and well worthy of remark, that the very first group of catalytic results, with which we are acquainted, form a complete series of chemical transformations. By the action of sulphuric acid, lignin or the fibre of wood may be transformed into gum, and this by the continued aid of heat, into sugar; sugar, by the action of yeast, gluten, and a variety of animal and vegetable matters, is converted into alcohol; being deprived of its carbonic acid. Alcohol, by the action of disintegrated platinum, is converted into acetic acid. Here then, is a series of results, brought about by catalytic action, commencing with the transformation of fibre of wood, and ending in the production of vinegar. Variations in this series might be mentioned; instead of lignin, starch might have been taken, which could be changed by diastase into sugar, and this again successively transformed into acetic acid. Now, every one of these substances is generally met with as the product of organic action, and indeed almost all the catalytic results known, end in the production of bodies allied to the organic kingdom.

14. The imponderables, as they have been called—light, heat, and electricity—are on all sides admitted to exert an unquestionable influence, in determining new forms of combination, and maintaining such as already exist. In view of the intense action, produced by indefinitely small portions of matter; Sir John Herschel remarks, that we may very reasonably ask, what evidence we have for the imponderability of any of those powerful agents, to which so large a part of the activity of material bodies seems to be owing? When, for example, a mass of mercury is alloyed with one hundred thousandth part of its weight of zinc, and placed under such circumstances, that it has to transmit an electric current, a force is set up, generated by that infinitesimal portion of zinc, which is probably of an intensity upwards of fifty thousand times that of gravity. Such considerations he adds "tend, if I mistake not, greatly to enlarge our views of nature, and to prepare us for the admission of the most extravagant *numerical* con-

clusions, respecting bodies less within the reach of our senses. That such minute proportions of extraneous matter should be found capable of communicating sensible mechanical motions, and properties of a definite character, to the body they are mixed with, is perhaps the most extraordinary fact that has yet appeared in chemistry." "Meanwhile, it is not improbable that many phenomena of minute intestine motions, usually attributed to capillary attraction, generation of heat, and other causes, may be referrible to similar causes. One, I cannot forbear to mention, from the striking *external* resemblance of the effect to some of those described in this paper, I mean the motions described by M. Amici, in the sap of the chara; as originating in certain rows of globules, disposed in the direction of the stream. 'The motion of the fluid, in the vicinity of these globules, has been attributed by M. Amici himself, to electricity developed in some unknown manner by them, and is so similar to what takes place, when a stream of electricity is made to pass over a row of minute globules of mercury, under a conducting medium, that one has difficulty not to presume, an analogy in the causes.'" (Bakerian Lecture.)

15. Thus much for the intense actions, both mechanical and chemical, that may be brought into play by exceedingly small portions of matter. Whether it is the presence of these small atoms, that gives activity to the tissues, and secerning organs of plants, and if so, under what laws this action is maintained, we can hardly say. The idea rises before us, with no small degree of probability, and is in fact the only known method, by which we can even guess at the mode of production of a crowd of chemico-vital phenomena. To refer all these facts to the operation of an unknown and obscure vital fluid or force, does not appear consistent with philosophy. Future investigation will determine all this.

Chemistry, is only now becoming a medical science. The foundations as a branch of general knowledge, were of necessity to be laid in inorganic nature. A great labour has been accomplished, in developing the relations of lifeless bodies, solid, liquid, and gaseous; in classifying them; and producing theories, that shall coordinate extensive series of facts. So far as this was necessary to the commencement of organic chemistry, or the chemistry of life, it has been done: a great amount of preliminary labour has now to be spent, in ascertaining the composition, the mutual relations, and the classifications of organised bodies, and the products of life. The annual reports on phyto-chemistry, published in Europe, show how eagerly chemists are completing this work. The detection of compound radicals, will no doubt soon be followed by the discovery of other capital facts. And improved methods of manipulation, in organic analysis, will give increased facility and certainty to operations, which are now difficult and intricate. No well informed chemist can doubt, that we are on the point of beholding inorganic chemistry, pass under the domain of the mathematical sciences; the calculus, that amazing engine of intellectuality, if once fairly applied to those branches

of knowledge, which have hitherto been regarded as sciences of pure observation, will work those wonders which it has worked, in so many other physical departments. One by one, we have seen light, heat, electricity, magnetism and electro-magnetism, fall within its grasp; and these are but preliminary chapters of the great treatise. And, what has it not done? it has rendered facts, heretofore supposed to be only discoverable by direct observation, deducible by processes of reasoning. The method of co-ordinates, first introduced by Descartes, which has cast such a brilliant light on Geometry, and revolutionised the physical sciences, is destined to act the same part towards chemistry. Even now, there are points in inorganic chemistry, on which the machinery of analysis can be brought to bear, as I propose, if health is continued to me, hereafter to show.

Hampden Sidney College, Virginia, Sept. 6th, 1838.

ART. VIII. *On Neuralgia of the Spinal Nerves, with Cases.* [From a Dissertation, read before the Connecticut Medical Society, at their annual meeting, May 9th, 1838.] By ISAAC G. PORTER, M. D., of New London, Connecticut.

THE term *neuralgia*, in its literal signification, does not embrace all the phenomena exhibited in the disease under consideration, the prominent symptoms consisting, not merely of *pain* in the course and origin of certain nerves, but also in abnormal action of the various organs to which they are distributed. To show the propriety of the appellation, however, compare an ordinary case of neuralgia (e. g. of the 2d branch of the 5th pair) with one resulting from irritation, either in the course or at the origin of a nerve proceeding from the medulla spinalis. In each, the structure primarily affected is the same, and the same cause may produce them, viz: irritation from pressure, or mechanical injury; or, for both alike, we may be unable to adduce any assignable cause. In each, pain is always more or less present as a prominent symptom; but if, because in the latter there is functional derangement of the organ to which the nerve is distributed, the term neuralgia be regarded as a solecism, with what propriety shall it be applied to a painful nervous affection of the optic nerve, terminating in amaurosis, or the same affection of an extremity, resulting in paralysis?

The design of this paper being, not to offer a full history of this disease and its essential character, as exhibited in its symptoms, &c., but merely to present a few observations which have been made while witnessing it, this part of the subject will be dismissed with one general remark: The doctrine of spinal neuralgia is founded on anatomy and physiology; and observation and experience are daily adding their sanctions to the deductions of science.

In our experience, decidedly the most efficient cause in its production, when it has suddenly supervened, the patient being previously in sound health, is actual violence; as a blow on the vertebræ, or a severe concussion of the spinal marrow from a fall. In other cases, a strain of the spine, as in powerful exertions at lifting, or in difficult parturition, has been often observed to be an active cause. The medulla spinalis does not occupy the whole canal in the vertebræ, and hence would be more likely to receive injury from a fall than even the brain. Its minute organization may have suffered, although a post mortem examination could not detect the injury. In other cases there appeared to have been, from youth, a peculiar irritability of the whole nervous system, which was roused to action by slight causes. Females are incomparably more subject to this affection than males. This may be owing to a peculiar delicacy of their nervous system, by which there is a greater susceptibility of impression, while at the same time their sympathies are more active. But there is another cause of this difference between the sexes, to be found in the fashion, which has long prevailed, of enveloping and confining the bodies of the one in stays or corsets. Some of the most obstinate cases under my observation have been referred by friends to this pernicious custom, and without any physiological knowledge to guide and influence their opinions. Do we not find, in this class of persons, that the muscles and ligaments of the trunk are unusually lax and attenuated? The following evils will naturally result: The compression of the body by means of materials sufficiently firm to afford an unnatural support, while it supersedes, in a great measure, the necessity of muscles and ligaments about the chest and spine, will, by the compression exerted, prevent their accustomed growth and strength. But how inadequate is the support afforded! Only revert to the effects of machinery in spinal distortions, and it will be apparent how far short that furnished by the best artificial means, falls, of the equal balance which nature affords. As a consequence, the spine, in the ordinary avocations and exposures of life, is constantly liable to injury from strains, falls, and the application of violence to the vertebræ. The medulla spinalis receives concussion, or the nerves, as they issue from the intervertebral foramina, are subjected to pressure, and disease supervenes. All this happens with more certainty, if, as is sometimes the case, the individual is, at the time of an accident, divested of her unnatural support. But perhaps still greater injury results, indirectly, from compression of the stomach, liver and lungs; the detrimental effects of which, acting primarily on the viscus, are thrown, by reflex action, on the spine.

In a late Number of this Journal, we find the following sketch of the views of M. Cruveilheir. "He maintains that affections of the stomach, heart, liver and lungs, frequently coincide with pain in a fixed point of the vertebral column, varying according to the organ diseased. He calls this spot the *dorsal point*. Painful diseases of the viscera are, it is well known, very often accompanied with pain in a determinate point of the vertebral column.

Cramps of the stomach, when arrived at their height, give way to a pain, more or less acute, about the fourth dorsal vertebra; and in some cases, the patient complains more of this pain than of the cramp of the stomach. This is observable, also, in ulceration and cancer of this organ. In hepatic colic this dorsal point exists, also, about the eighth or ninth dorsal vertebra. In all pains of the heart, whether nervous or sympathetic, or of organic lesion, whenever they attain a very great height, the dorsal point at the fourth or fifth vertebra accompanies the pain of the organ, and distracts the patient more than the pain of the latter, &c. Cruveilheir has found that greater relief is experienced by applying the remedies to the dorsal point than to the other parts; as, for example, patients affected with cancer of the uterus, receive greater relief from blisters, leeches and cauteries, to the dorsal point, than to the hypogastrium."

This view, though not new, endows the subject with fresh interest and importance. Is spinal neuralgia, then, a secondary affection, or is it primary? is it effect or cause, so far as the existence of certain anomalous symptoms is concerned? Probably it is both, according to circumstances. Regarding it as secondary to some other affection, the above statement must be taken in proof, rather than any extended observations of the writer. Severe functional diseases in any organ, produced by ordinary causes, may undoubtedly so influence the nerves of that organ, as, through a reflex action, to produce an abnormal state of the origin of those nerves. Take the well known example of headache from crudities in, or derangement of, the stomach. The par vagum, which arises from the brain and is distributed to the stomach, is irritated, and pain is felt at its origin. That this affection may in some cases be secondary, will still farther appear from the experiments of Marshal Hall, showing a reflex action of the medulla spinalis and oblongata with the corresponding nerves. The following is given by the physiologist just named, as a type of all the reflex actions of the spinal marrow, and of the excito-motary system of nerves. "If, in a turtle, from which the head and sternum have been removed, we lay bare the sixth or seventh intercostal nerve, and stimulate it by the forceps or by galvanism, both the anterior and posterior fins, with the tail, are immediately moved with energy—thus showing currents of nervous influence upwards, downwards, and reflex, with regard to the spinal marrow." This theory has been well expressed in these words by our able author: "It appears that each nerve has a point in the brain, or spinal marrow, with which it is in special relation. The sensory filaments go from a portion of the body to that point; the motor filaments pass from that point to the said portion of the body. Thus a sort of nervous circle is maintained; and into it every part of the body, supplied with sensory and motor nerves, and a corresponding point in the spinal marrow or brain, must enter." Guided by this theory, how beautifully are the phenomena of that disease, which, by the distinguished author of the theory, has been denominated *mimosis*, or imitator, explained. This, which is originally a mere

functional affection of the digestive system, soon involves the whole organism. Although functional, it may still be true that the nerves were in fault from the beginning. Travers, as quoted by J. Johnson, observes, that "functional diseases belong almost exclusively to the nervous system, and organic to the vascular." How common in this affection are tremors and numbness of the extremities, palpitation of the heart, obstinate hiccough and vomiting, with pyrosis, and convulsive and spasmodic affections. How easily are these explained on the theory that the original affection has been transferred, by reflex action of the nerves and medulla spinalis, which is "the source of tone in the whole muscular system," to show itself in other forms. The operation of this physiological law in explaining pathological conditions, will be daily more extensively noticed. Whether it will lead to more efficient treatment, remains, in a great measure, to be tested by experience. We may remark, however, that functional disease, occurring in any organ, no tenderness existing over the medulla spinalis, will probably be best treated by ordinary therapeutical means; but if, through a reflex action of the nerves the vertebræ become tender on pressure, local depletion and external irritants to the spine *may* be of service, but we should argue, on theoretical principles, that they would be most so in such affections as sprang up subsequently to the existence of the spinal irritation.

The following cases, selected from many others of like import, will exhibit the prominence, which should be given to mechanical causes, in the etiology of this disease, and, also, the efficacy of a system of treatment, based upon the principle, of referring the anomalous and abnormal actions, which result, to a neuralgia of the spinal nerves. It is no small recommendation to say, that this plan of treatment proffers the means of cure, or of relief, in some of the most intricate, anomalous, and obstinate affections to which the human organism is subject. The cases which are annexed, while they will illustrate some of the leading points in this condition of the system, are probably sufficiently rare, to render their recital not uninteresting.

CASE I. An unmarried lady, now about thirty-three years of age, in the year 1822, was supposed to be affected with morbus coxarius, which continued three years, and was ultimately thought to be *cured*, but without the slightest deformity, by solut. mur. calcis. From the subsequent history of the case, may we not suppose that it was only a nervous, or hysterical affection of the hip joint, so well described by Brodie? She was next attacked with a neuralgia of one of the branches of the fifth pair of nerves, the pain locating itself in one of the dentes cuspidati. This was extracted, after which, the pain ceased for two weeks, but returned in the opposite one. This was also extracted, as were others that were successively attacked. Medical aid was now sought, and powerful narcotics, and tonics were resorted to, but without any appreciable effect. The agony continued, violent convulsions followed, and contrary to the judgment of the medical attendant,

he was forced to consent that another tooth should be extracted. This done, although the patient had been for hours insensible, and was regarded as in a dying state, the pain and convulsions, either from the local abstraction of blood, or from some other cause, immediately ceased. But the truce was of short continuance. Another tooth was attacked and extracted, and another, until the dentes sapientiæ, then in an immature state, were with difficulty removed. Thus, after a continuance of six months, the disease took its departure to return only occasionally, and for a short time, in the maxillæ.

In the year 1831, while endeavouring to raise her dying father, she felt, to use her expression, a snap, or severe shock, in the dorsal portion of the spine, followed by acute pain in the left side, circumscribed for the most part, being confined to a small spot, two inches to the left of the scrobiculus cordis, but darting through to the spine. Occasionally during the two succeeding years, the pain would attack the bowels, producing the most intense colic-pains, alternating with profuse discharges of blood, purulent matter, and a substance resembling tar or molasses.

November, 1834. Forced to resort to her bed, for more than a year; she was unable to leave it, through the distress caused by turning, or motion of any kind. During all this period, however, so great was the dyspnœa, that she could rarely indulge in the horizontal position. A blister applied to the sternum would increase the difficulty of breathing, while one applied on the left side, over those spinal nerves primarily affected, would in some measure mitigate her sufferings. Calomel in small doses was now resorted to, but owing to its unfavourable effects, it was soon discontinued.

March, 1835. There was, at this time, a sudden and violent increase of the pain in the side; an incessant cough now commenced, and spasms, the most excruciating, darted through the chest to the spine. The bowels were not moved for weeks, and the mucous membrane of the mouth and œsophagus, were much ulcerated and abraded. Next the most obstinate vomiting commenced, which, after continuing for three days, was checked by a blister over the stomach and left side. Immediately on its cessation, pyrosis commenced. The discharge resembled a very thin mucilage, was insipid and transparent, and ran from the mouth, while the patient slept, so profusely, as in a single night thoroughly to wet ten or twelve towels. The paroxysms became so severe, that the patient would faint, and for a long time remain insensible, and would return to consciousness, only to find the same insupportable distress. The scene changed to the lumbar vertebræ, and, from that time until a recent date, the bearing-down pains in the uterine region were so intense, that although resting in the horizontal position, or nearly so, her sufferings would, for hours together, equal those of a woman in labour. The urinary function was also much deranged, water being sparingly secreted, or if more abundant, pale, and discharged with difficulty.

May, 1835. With this change in the symptoms just referred to, there was a corresponding variation in the character of the sputa. From being

transparent and colourless, it now assumed a "bluish" hue, and appeared much like thin starch, tinged with indigo. Rather thinner than the white of an egg—like that substance, it was tenacious and ropy, and the surface of the fluid, was always covered with a thick froth. The quantity raised during the succeeding six months, amounted on an average, to a quart in twenty-four hours. Frequently it would surpass that amount, the quantity varying with the violence of other symptoms. In the same proportion, the bluish tinge was deepened. In the night, the patient was often nearly suffocated. Morphine would check it, but at the same time tightened the cough, and greatly increased the dyspnoea. A burning sensation constantly existed in the stomach, accompanied by much local heat, externally; yet contrary to what is usually found in pyrosis, the fluid which appeared in the mouth was never eructated. She would often vomit, at once, half a pint of a similar fluid. Coughing would also cause its appearance.

During the summer of 1835, there were almost daily paroxysms, which seemed to threaten the life of the patient. In September, she became very hoarse; had a regular phthisical cough, with chills every afternoon, followed by fever, which was succeeded by night sweats. Owing to the dyspnoea, which with the cough, and the pyrosis, had proceeded "*pari passu*," with the distress in the side, there was an entire inability to recline in bed. Turning from side to side, even with assistance, would cause the most excruciating distress throughout the whole trunk of the body.

It is now three years since this case first came within the writer's notice, and at the almost desperate stage which has just been described. Its history, therefore, has been furnished by the patient herself, who is intelligent, and remarkably free from that disposition to magnify sufferings, which is sometimes found in hysteria. The account, as given by her mother, who is entitled to high credit, coincided in all points with the foregoing. Most of the symptoms, the writer had an opportunity of witnessing, particularly the pyrosis. It was now suggested to her, that her disease might consist in spinal irritation. The whole length of the spine, below the fifth dorsal vertebra, was found, on examination, tender on pressure, and although but little force was used, the pain continued very severe for hours. The seventh, eighth and ninth dorsal, and the third and fourth lumbar, were peculiarly sensitive. The treatment pursued need not be detailed in full. The first blister rendered turning in bed easier, and induced the return of the catamenia, which had been absent for many months, and since that time they have continued perfectly regular. The second blister considerably diminished the pyrosis, which soon after ceased entirely, to return only in small quantity, when from fatigue, or taking cold, the pain in the left side is renewed. One symptom after another yielded, so that the patient was soon after able to leave her bed, became free from pain, and now attends to her usual avocations about the house. There is, as in all chronic cases of this disease, a peculiar susceptibility to slight relapses, but they have speedily yielded to

ung. tart. antim. and cups to the affected vertebræ, with an occasional dose of calomel. For the last year, up to the present time, (August, 1838,) she has been subjected to no medical treatment, except the application of two or three cups, and as many blisters.

The most interesting point in the foregoing case is the excessive pyrosis. It will be recollected, that for eight months, the quantity raised amounted, on an average, to one quart a day. Some pathologists have regarded it as an idiopathic disease, others, as depending on a diseased state of the mucous membrane. That this membrane is affected no one can doubt, but ought it not, more frequently, to be regarded, as symptomatic of spinal irritation? It is often noticed in co-existence with this affection, and when it occurs in dyspepsia, may it not often be traced, through a reflex action of the nerves, to spinal or ganglionic irritation? It rarely yields to ordinary internal treatment, and in severe cases, the spine should undoubtedly be examined. It is true, that were the ganglionic system alone affected, no tenderness of the vertebræ, may exist, and yet local bleeding, with occasional blisters, to the spine, may prove serviceable. The instance related above, yielded so evidently and completely to such a course of treatment, that no one can doubt its origin, or believe that any other course of medication would have proved equally successful.

CASE II. Mrs. S., 30 years of age, the mother of one child, was, in the fifth month of pregnancy, accidentally precipitated down a flight of stairs, and injured the lower dorsal and upper lumbar vertebræ. Although abortion was not produced, yet great tenderness of the part was caused, which has continued until a recent date. After delivery, profuse flooding followed, which, for six months, could not be successfully checked. Subsequently, the discharge returned every two weeks, and continued eight or ten days at each period. Until pregnancy, the menses had been perfectly regular, and she enjoyed sound health. Various means were employed to check the menorrhagia, but without effect. At the same time, attacks of anomalous disease were frequent and debilitating, assuming, at one time, inflammation of the liver, for which blue pill and blisters were prescribed with ultimate benefit. There was also profuse hæmoptysis, but without cough; ischuria requiring the catheter; and also suppression of urine, not more than eight ounces being secreted in thirty-six hours.

December, 1836, four years after the birth of her child, she came under the care of the writer. The menorrhagia still continued, and a severe pain in the left side had just seized her. A blister, although it produced full vesication over the seat of the pain, had no effect in quieting it, and it now became excruciating with every breath. Inquiring into the state of her health at former periods, and learning the foregoing history, the spinal column was examined. All the vertebræ below the eighth and ninth dorsal were found tender on pressure—the pain in the side being much increased

by the examination. As soon as the appropriate action of a blister to the spine could be produced, the pain in the side was relieved as by magic. In six or eight weeks she was more free from disease and suffering than for years before. She was then attacked with a sharp pain in the whole upper portion of the spine. This was relieved by a blister; but was followed by the most excruciating pain in the left side, just below the ribs. Difficult as it may be to explain, there was not the least pain or tenderness in any portion of the spine. Was it because the pain in the side was so severe, that under ordinary pressure the amount of pain caused formed but a faint comparison with the agony (for it was actually such) which existed in the side? A blister of the best cantharides plaster produced not the least smarting or redness, although vesicating a patient admirably in an adjoining room—nor yet when made with a threefold proportion of cantharides—nor even when the surface had been previously rubbed with warm oil of turpentine, nor when covered with an undiluted mustard paste. A very strong pulsation had existed for a week in the seat of the pain, which was located about one and a half inches above, and the same distance to the left, of the umbilicus, and which appeared like an aneurism of the cœliac artery. The throbbing was synchronous with the pulse, but incomparably stronger. By grasping the integuments, the fingers would come in contact with it, giving the sensation of its being as large as the little finger. It could be distinctly felt through all the clothes, and even jarred the bed, annoying the patient; and, together with the pain, preventing all sleep. At one time the patient became very faint—pulse a mere thread—and she appeared dying. Nothing had recently been retained on the stomach—the bowels were costive, and tongue covered with fur. Blisters to the spine were not tried, as no tenderness existed. Active purgatives of extract of colocynth and calomel, when the stomach was able to retain them, were of much service. Nervines and anti-spasmodics, with black drop, had not the slightest effect in producing relief. In three weeks from the attack the throbbing and pain began to diminish, and soon entirely ceased, with the return of health. The derangement in the catamenia had been gradually improving, since the application of the first blister to the lumbar vertebræ. A few more completely removed all irregularity; which condition has continued ever since. Two successive summers, since, she has had a singular headache, which was much increased by pressure over the upper cervical vertebræ; also, much nausea, vomiting, and diarrhœa, with tenderness of the corresponding vertebræ. Blisters were applied without the ordinary good effects. Leeches, however, proved immediately successful; and at the present time (August, 1838) she is in good health.

From the absence of spinal tenderness accompanying the pulsation, simulating aneurism, it may have been only a local hysterical affection; or, from the relief afforded by cathartics, may we not suppose that there may have been a collection of fæces in the left arch and ascending portions of the colon, which aggravated, if it did not produce the affection. Another supposition

is, that from the excessive and long continued loss of blood there may have been anæmia, a condition of the system in which local pulsation is by no means unfrequent.

CASE III. Mrs. N., 35 years old, formerly enjoyed perfect health, but has recently been regarded as *hysterical*. All her sufferings she traces to a severe strain in the back, received while shaking a carpet. In the summer of 1837, while suffering under anomalous symptoms, the vertebræ were found tender on pressure. Violent pains existed in the stomach, with pyrosis, as in Case I. There was also the impression that the parietes of the stomach were drawn by cords to the spine; and that this connection drew her body forward, in which position it was immovably fixed. All the symptoms were relieved by venesection and blisters to the spine.

October, 1837. Six months since, while engaged in some laborious occupation, the motions of the heart became singularly changed, which affection has continued, at intervals, ever since. Violent paroxysms of jumping and trembling of the heart would occur, followed, for some minutes, with ordinary palpitation—and returning, spontaneously, many times in a day. The heart examined externally, at these seasons, appears much hypertrophied; and its motions were so violent as to give the impression that it must burst its parietes. There was tenderness not only of the corresponding vertebræ, but also of the posterior surface of the thorax opposite the heart. The stomach was also singularly deranged. In her tautological language she often compared it to a "*great hollow hole*," within which was a constant crawling sensation that excited a dry hacking cough, with occasional expectoration; which was "salter, if possible, than brine." Treating it as a case of hysterical nervous excitement—emetics, castor, assafœtida, and valerian were tried in large doses, also a plaster of assafœtida to the region of the heart. All, however, in vain, so far as preventing a return of the paroxysms. Pressure of the vertebræ increased the stricture of the stomach, and the palpitation of the heart. A blister to the spine, for a time, aggravated all the symptoms; but the application of a poultice, and the administration of a dose of calomel, soon permanently relieved all the distressing affections, since which period she has enjoyed good health.

CASE IV. A man, 50 years of age, addicted to intemperance, was affected with hiccough to such a degree, that he could neither eat in any peace, nor sleep; and having continued ten days, he said that he could not endure it much longer. There was great tenderness of the third cervical vertebra, at the origin of the phrenic nerve, which is distributed on the diaphragm. A blister was applied to the tender vertebra; and, as soon as vesication commenced, the affection was removed.

A similar case, in a late subject, occurred within the present month, (August,) with the same tenderness over the upper cervical vertebra, which was relieved,

not so soon as vesication commenced, but immediately on the inflammation, which was thereby caused, being moderated by a poultice.

Whence proceed the symptoms so prominent in the cases just detailed, and so common in intemperate persons, especially after a debauch? May it not be regarded as showing the reflex action of the nerves? Irritation existing in the stomach, it is thrown upon the diaphragm, which is immediately contiguous; thence it is transmitted through the phrenic nerve to its origin, subsequently to become manifest in convulsive action of the diaphragm. In language which has already been quoted, "sensory filaments go from a portion of the body" (diaphragm) "to that point" (a point in the brain or spinal marrow, with which the phrenic or diaphragmatic nerve is in special relation) "and motor filaments pass from that point to the said portion of the body."

CASE V. The patient, a young lady now 22 years of age, was thrown from a wagon in September, 1836, and dragged for some distance on the ground, by becoming entangled in some part of the harness. She is ignorant what portion of the body received most injury, but from the circumstance that her corset-board (hickory) was broken, while the lacings remained entire, she thinks her stomach must have received some contusion, and that the back was strained by a forcible bending of the body. She fainted, and it was long before she could be removed, owing to the spasms which motion caused. Much numbness, and incessant vomiting, for three days, followed; neither solid nor fluid, in the smallest quantity, being retained. Previous health in all respects good; but since the fall, menstruation has become deficient in quantity and irregular in its returns. There has also been great weakness in the back, much headache, and obstinate costiveness. The vomiting ceased for a time, but gradually returned, with an uneasy feeling in the stomach, even when empty. Since July, 1837, until recently, she has retained almost nothing on the stomach, every thing being eructated the moment it was swallowed. A morsel of hard bread, or a little sugar or tea, or a pill, would occasionally be retained, but not without great distress; and ordinarily, after it had been in the stomach for hours, it would be thrown off as undigested and with the same taste and smell as when swallowed. Pyrosis, and great acidity of the stomach prevailed, with ulceration of the mouth and fauces. Notwithstanding the little that was retained on the stomach, her appearance by no means betokened great emaciation. This is generally the case in spinal neuralgia, or at least the external appearance is not such as would be expected from the violence and long continuance of the disease.

March 11th, 1838. There has been no evacuation of the bowels literally for weeks, and the vomiting and other symptoms are urgent. Great tenderness was found to exist from the lower cervical to the eighth or ninth dorsal vertebra; also a numbness extending to the left shoulder and arm. Resolved to try the effects of ordinary remedies first, oxide bismuth was ordered, with a blister to the stomach. The former, like every thing else,

was immediately vomited, but the latter relieved the pain in the head, and greatly benefitted the ulceration of the mouth; at the same time it greatly increased the tenderness of the vertebra opposite the stomach. The vomiting still continued unmitigated. A blister to the affected vertebra (for leeching or cupping she would not submit to) seemed, if possible, to increase all her sufferings. The head was more painful; and not a particle of any thing could be retained on the stomach, and no motion of the bowels had been obtained for weeks. Ineffectual efforts at vomiting were constantly maintained, even when nothing had been taken upon the stomach. Even calomel was immediately ejected, in whatever vehicle taken, and enemata had no effect in moving the bowels.

20th. Acet. morphiae was given in hopes of quieting the stomach, followed by croton oil, but both were vomited. Next, after removing the cuticle from the epigastrium, by means of a blister, acet. morphiae, $\frac{1}{2}$ gr., was applied every three hours, and each application followed by calomel, gr. ii, taken nearly dry into the mouth. Four applications of the morphia were made, and after continuing the calomel, a part of which was vomited, less frequently for three days, the bowels were moved. The motions were exceedingly offensive, resembling tar, or molasses, and were followed by a diarrhoea and discharges of blood, with great pain in the bowels. Hitherto, the therapeutic course adopted had only seemed to aggravate, rather than relieve. But this result was not unexpected, the same effect having been witnessed, for a time, from severe external irritants to diseased vertebræ. A slight salivation was caused, and when the effects of this began to decline, and the blister to heal, she rapidly regained a comfortable state of health. Her stomach became much less irritable than for months before, and considering the state in which it had so long been, it was not surprising that it did not at once recover its tone. She now retains light diet, in small quantities; her headache, and the distress in the stomach, have entirely ceased, and her bowels, from being obstinately costive, have become perfectly regular in their functions; and so well was she, that early in April she passed from under my observation.

The following case resembles one recorded by Sir Charles Bell, in his "Consultations and Cases," and although it differs in its pathological relations from the foregoing, yet, depending doubtless upon an affection of the nervous system, it has its points of affinity. In Mr. Bell's case, probably, no plan of treatment was found serviceable, for none is recorded, and he adds: "All the subjects of these odd cases, which we do not understand, get well. This is consolatory to a patient, certainly, but not very satisfactory to ourselves."

CASE VI. *January, 1838.* A young lady, thirteen years of age, of a phthisical family, was, after active exercise, the next day attacked with a cough, which was usually short and dry, consisting ordinarily of one expiration, but on motion or under excitement, of several successive, loud and barking expirations, but without expectoration. This "hack," or short cough, was re-

peated, on an average, three times in a minute, and at intervals, for a length of time, it would return every third second. While she slept, however, there was a perfect respite; and sleep, whether natural or obtained by narcotics, had the same effect. Only a weak anodyne, if given at the hour of retiring, was necessary to procure quietness until the next morning, when the same incessant barking was heard by the family. Her health in other respects was good; pulse and appetite nearly natural, and tongue but slightly coated. An enlargement of the tonsils had for some time occasionally existed, and as such was now the case in a slight degree, the cough was at once referred to that source; but the tumescence soon entirely subsided, without inducing any mitigation of the cough. The uvula was of its natural length, and no tenderness existed about the throat except towards evening, after having coughed through the day. There was no pain or soreness about the chest, and the respiration during sleep was natural. No hoarseness except in the evening.

Among the remedies resorted to, were demulcents, with ipecac. and opium, —vermifuges, spigelia and ol. terebinth.—mercurial and other cathartics,—gargles of capsicum and solut. nit. argent. applied with a pencil,—emetics, castor, and assafœt., ext. hyoscy., and iodine in the form of tinct., and burnt sponge. Supposing that it might arise from an enlargement of the tonsils, blisters were twice applied to the top of the sternum and the back of the neck. The swelling subsided, but not the cough. In this manner it continued for six weeks; and, considering the constitution, giving rise to much anxiety as to the issue. A remedy, just alluded to, was now tried in a new form. The whole *front* of the neck and fauces was covered with a blister, which almost in a night removed the affection, and left the patient weak, but otherwise in ordinary health.

After what has been said on the subject in the detail of the foregoing cases, the treatment need not detain us. Calomel, in purgative doses, is often one of the most efficient remedies; carried to the point of salivation, it has seldom or never been purposely resorted to, and cannot often be borne for any length of time. Opiates in some one of the various forms of morphine, black drop, or elixir of opium of McMunn, with other narcotics, have been more or less used in almost every case. Blisters to the spine have always maintained the first place in our therapeutics. Our opinion, however, has been modified by experience. Through the proximity of the medulla spinalis to the surface, or for some other cause, the irritation produced by blisters and tart. ant. ung. is so great, that, in very susceptible subjects, they often for a time appear to increase rather than diminish the original affection. In almost every case, however, they are ultimately followed by decided improvement. For the sake of avoiding irritation, and securing an immediate action, leeches and cupping are generally preferable.

We may be too sanguine in our ideas of the importance of this subject. Cases of obscure, perhaps ganglionic, disease may exist when the tenderness of the vertebræ will not be detected, and when a course of local depletion and

external irritants to the spine will prove of little or no advantage, yet it is our candid belief that a correct practical estimate of this subject, as presented in the writings of recent authors, will do as much to relieve human suffering as any other single improvement, or discovery in medicine, of the present century.

New London, Sept. 1838.

ART. IX. *Cases of Necrosis illustrating the Practice of Exposing and Perforating the Diseased Bone at an early period in the progress of the malady.* By T. MORVEN SMITH, M. D., of Baltimore.

WRITERS on the subject of Necrosis have almost universally directed their attention too exclusively to the very common result of that disease, the death of bone, and have neglected to investigate satisfactorily the pathology of the early stages of the malady, and the remedies calculated to arrest its progress in its incipency. The writings of Weidemann, of Boyer, Bell and others, are defective in this particular. The death of bone is no more the necessary result of this disease than is hydrocephalus the necessary sequel of inflammation of the membranes of the brain. The term "necrosis" is indeed not less unfortunate in its application than that of "hydrocephalus," and the strict definition of it has led to the same errors in pathology and practice.

The following cases are designed to illustrate and justify pathological views, and a mode of treatment suggested some years since by my father, the late Professor N. Smith of Yale College, in his surgical memoirs. He regarded the disease as simply an inflammation of a bone, owing its too common result, death of the organ, to its anatomical structure. He regarded the deposit of pus in the cavity of the bone as the cause of its death, and maintained that the result could be averted by perforating, or trepanning, the bone at an early period. In the following cases it will be seen that this plan was adopted, and that it was successful in every case,—in one, indeed, in which the time which had elapsed would seem hardly to have justified such an expectation.

CASE I. July 26th, 1835, I was called to visit the son of Captain Morley, of West Springfield, ætat. 16. I found the patient suffering from severe pain in one leg, particularly in the ankle. The lower portion of the leg, the ankle, and the foot, were much swollen; the pulse was hard and quick; skin hot, the tongue white, the patient extremely restless, the least jar or motion of his bed causing him to cry out. The father's account was that his son had been perfectly well until three days previous, when he was taken with pain in one ankle, after having laboured for several hours exposed to a hot sun, at the same time standing ankle deep in cold spring water.

As it was late in the evening when I was called; I covered the part affected, with cloths wet with an evaporating lotion and left the patient for the night. Upon reflecting on the case, the following circumstance decided in my mind the nature of the disease; first, the age of the patient; secondly, his previous uniform health; thirdly, the apparent cause: fourthly, violence of the attack; fifthly, the swelling of the leg; sixthly, the redness and extreme sensibility to the slightest touch; seventhly, the violence of the symptomatic fever. All these circumstances taken in connection convinced me that it was the commencement of necrosis.

July 27th, early in the morning I again visited my patient, found he had passed a bad night, all the symptoms aggravated; he had taken an opiate without relief and the evaporating lotion had had no effect. I now concluded to operate according to the plan of my father, Dr. N. Smith, i. e. to cut down upon the bone, and if I found matter under the periosteum, also to perforate the bone. I was led to fix upon a point about two inches above the inner ankle, on the flat part of the tibia to make the incision, from two circumstances; first this point seemed to be the centre of the inflammation; secondly, it being the point where the patient evinced the most pain from pressure. With a scalpel I made an incision down to the bone, and found the periosteum elevated and tense, from the quantity of matter beneath it. I next dilated the wound upward and downward as far as the periosteum was raised from the bone, which made an incision about four inches long. After sponging away the blood and matter from the wound, I perforated the bone in two places, one inch from each angle of the external wound. Purulent matter flowed out of the cavity of bone from both perforations. In one hour my patient was entirely free from all pain and in a quiet sleep.

28th. Patient still doing well; no pain; pulse becoming soft; had had a good night's rest; some discharge from the wound.

29th. Not so good a night; pulse hard again; pain about the knee and upper part of the leg; the wound inflamed; the upper part of the leg a good deal swollen.

30th. Pain in the limb much increased; more swelling of the upper part of the leg, and at this time an extremely sensitive point, about two or three inches below the knee on the flat of the tibia; the wound below looks inflamed, I was convinced that the same state of things existed in the upper part of the tibia that there had in the inferior portion of the same bone. Desirous that some other medical gentleman should witness the effect of the operation, I invited my friend, Dr. Humphreys of Southwick, to be present, and in the afternoon, in his presence, I performed the same operation upon the upper portion of the tibia, which I had executed upon the lower, and with precisely similar effects. Dr. Humphreys expressed himself as highly gratified with the result of the operation.

31st. Patient is now free from pain; lower wound looks better; pulse soft; good night.

August 1st. Patient still better; wounds look well; discharge moderate.

3d. Patient very comfortable; appetite good; sleeps well.

I had the satisfaction to see my patient recover without any untoward symptoms, or exfoliation of bone.

CASE II. October 16th, 1836, I was called to see a patient of Dr. Ives of Suffield, Connecticut, ten miles from my residence. I found the patient (a boy about fifteen years of age,) suffering from very severe pain in one limb, very high symptomatic fever, pulse hard and quick, tongue white, skin hot, thirst urgent.

On examination I found much tumefaction of the leg, between the knee and ankle, and also of the foot. This was the fifth day from the attack, which had been very sudden; the leg was hard and unyielding to the touch; the foot was œdematous from the interruption of the circulation above. On the flat of the tibia, nearly equi-distant from the ankle and knee, there was a spot which was much more sensitive to the touch than any other part of the leg. At this place I determined to cut down to the bone. I therefore made free incision extending along the tibia about four inches; matter gushed from beneath the periosteum. I then, after sponging away the blood and matter, perforated the bone in two places, one inch from each angle of the incision. Purulent matter came from both perforations.

Nothing could be more gratifying than the result of this operation; all pain was gone in less than an hour; the inflammation disappeared at once, except so much as was necessary for the curative process; no exfoliation took place, healthy granulations shot up; the boy was well in a few weeks.

CASE III. May 5th, 1837, I was called to see a boy seven years of age, the son of Stiles Fox, of Westfield. The father of the boy being very poor, he had been without shoes from the time the snow left the ground, and a few days before he was attacked, and indeed the day before, he had been up to his knees in cold water for hours at a time. This case had been badly managed by the parents, and seven days had been suffered to pass before I was called. I found the poor boy in an agony of pain; very high symptomatic fever; pulse extremely quick and hard, and the artery felt very small under the finger. The left leg was the part affected; it was swollen from the knee to the toes, very red and excessively painful; the slightest touch or motion, causing him to cry out. The mother informed me that the day after her son had been so long in the water, he was taken with a severe pain in his foot and ankle, and the next night there came on a high fever. I found the centre of inflammation to be a point about three inches above the inner ankle, and I thought I could feel fluctuation at this place. Without delay, I made a free incision down upon the flat of the tibia, about four inches long. As I expected, I found the matter had escaped from under the periosteum and there was a good deal of it. I then perforated the

bone as I had done in the other cases, and pus was discharged from the opening. Two days after this, I made another incision down upon the upper part of the tibia, and perforated the bone. This boy became much prostrated, and required large doses of brandy, bark, and tinct. opii. to sustain him; the bone exfoliated to some extent, and I had no doubt that under any other mode of treatment he would have lost his life, to say nothing of his leg. The boy is now well, and has a good leg.

CASE IV. This case occurred in the same family with the above, for this poor man, like many others, was blessed with a large family. A little boy, two years and six months old, had been sent from home on account of his brother's illness. He now returned, having been taken three days before with very severe pain in the foot, and lower part of the leg. I found the foot much swollen, and the outer ankle much inflamed. About two inches above and on the fibula, I found the most sensitive spot, and upon it, cut down to the bone, and made two perforations. The boy did well.

ART. X. *Case of Talipes Equinus—Operation by Stromeyer's Method—Cure.* By JAMES H. DICKSON, M.D.

R. D., ætat. 14, a lad of rather small stature and delicate complexion has that variety of club-foot called by some of the French surgeons, *pied equin*, in which the heel is forcibly drawn backward and upwards.

History.—At birth there was no perceptible deformity of the limbs or feet; but when the child began to creep, he was observed to drag the right leg after him in a very awkward and peculiar manner. He was late in learning to walk, and has never been able to get more than the toes, and that part of the foot corresponding to the extremities of the metatarsal bones to the ground.

Present state.—The left side of the body is well developed, muscular and strong, the foot well formed, and somewhat larger than the other. The right superior and inferior extremities are very perceptibly smaller than those of the left, exhibiting an original defect of the *visus formativus* in the entire right half of the body. The right leg is about half an inch shorter than the left, measuring from the anterior superior spinous process of the ilium to the external malleolus. The heel is so drawn up by the retraction of the gastrocnemii muscles as to be full three and a half inches from the ground. The tarsal bones are very prominent, and the superior surface of the foot, when in the erect posture, is almost in a line with the anterior face of the leg. From having so small a basis for the support of the body, the mode of progression is very peculiar. In walking, the weight of the body rests for a moment on the point of the right foot, while the left leg is thrown forward in a very hurried manner; so as to give to the gait a mixed character, partaking both of hopping and walking. There is but little mobility in the ankle joint, and the power of the will over the flexor muscles

seems to be entirely lost. The heel is very small and narrow, and as it has never come in contact with the ground, the skin is delicate and tender.

Operation.—*January 10th, 1835.* Assisted by Dr. Benjamin Robinson of Fayetteville, N. C. I divided the tendo Achillis two and a half inches from its insertion, by passing a sharp-pointed narrow bistoury beneath the tendon, and dividing its fibres from within outwards, merely cutting through the tendon without wounding the skin, except at the point where the bistoury was introduced. As soon as the division was affected, the foot easily came down to near a right angle with the leg. It was soon restored to its original position, a bit of adhesive plaster placed on the small wound made in the skin, a compress placed on each side of the divided tendon, and secured by a roller. A splint was also applied on the front of the leg and foot. There was so little suffering from the operation, that the exhibition of an anodyne was required only once or twice during the treatment.

January 15th. Stromeyer's apparatus for the extension of the fibrinous deposite between the cut ends of the tendon was applied. The extension was very cautiously, nay, almost imperceptibly, increased from day to day, until the expiration of the fourth week, when the foot was found to be at a right angle with the leg. The extending apparatus was now taken off during the day, and a laced boot worn, the apparatus being reapplied at night for a week longer. I was induced to apply the apparatus for extension at an earlier period than that originally practised by Stromeyer, from having met with an account in the *Med. Chirurg. Rev.* of a case in which Stromeyer partially failed, as he supposed from his delaying the extension too long.

At the end of the second month my patient could walk with very little limping, the deficiency in the length of the limb being remedied in a good degree by a high-heeled boot. The deformity was entirely removed, and the flexor muscles very soon became obedient to volition. When I last saw him, in May, 1837, he walked with ease, and with a scarcely perceptible limp. The limb had become much more developed, and its muscular power greatly increased.

New-York, July, 1838.

ART. XI. *Insanity with complete Taciturnity for nearly three years—Application of Galvanic Plates—Restoration of Speech.* By CHARLES EVANS, M. D., Attending Physician to the Friends' Asylum, near Frankford.

THE following case is worthy of being recorded for its singularity. Whether the sudden restoration to speech was the consequence of, or a coincidence with, the means employed, I leave others to judge.

E. D., the wife of a gentleman of high standing in the state, entered the "Asylum for the Relief of Persons deprived of the use of their Reason," near Frankford, in 1829, and came under my care in 1832. She had then been deranged for thirteen years, and was fifty-four years of age. Size medium, complexion fair, countenance intelligent. General health unimpaired. Head cool, pulse natural, tongue moist and slightly furred; digestion good. From the history given by her friends, it appeared that her original character was shrewd

and sprightly, and had been improved by education. Her disease, which was hereditary, came on gradually: an incapacity or unwillingness to speak had manifested itself a short time previously to her coming under my care, without any discoverable cause. There was no paralysis, and, as far as could be seen, no obstruction to the exercise of the organs of voice, but every means resorted to had failed to produce the enunciation of a word: her hearing was perfect. The expression of her countenance was often anxious and imploring. She usually took her stand in one particular part of the general sitting-room, and, unless when going out to ride or to some other recreation, would remain there most of the day, never voluntarily seating herself. She took no part in any kind of employment, and, though a close observer of what was going on around her, generally appeared occupied with her own thoughts exclusively, disliking, and often resenting, any intrusion. After a careful examination of the symptoms, it was concluded to place her under a course of emetics, which were administered, three times a week, for six weeks, when the stomach becoming disordered they were discontinued. Cups to the head, and the shower-bath were afterwards resorted to, and a stream of cold water repeatedly thrown upon her suddenly and unexpectedly; but nothing improved the manifestations of mind, or called forth an expression. Blisters were applied to the back of her neck, and legs, but without relief, and, after persevering in the use of every means, both medical and moral, which offered a hope of benefit, for several months, she was left without further medical treatment. Her general health continued good. She frequently rode out, and was evidently interested and pleased with her excursions. Occasionally she would listen with attention to the conversation of those about her, and sometimes took part in it by signs, like one who had always been dumb. When asked why she did not speak, she shook her head, and intimated she could not. This state of things continued until the latter part of 1834, when it was concluded to try the effect of galvanic plates upon her. At that time she had not been known to speak for nearly three years. Accordingly, the cuticle having been removed by blisters, plates of the usual size were applied, the silver one on the occiput and the zinc a little below the knee. They were worn in this way for several days without any effect being observed. One morning while the nurse was readjusting the plates, without any particular result being anticipated, she was directed to reverse them, applying the zinc above and the silver below. This being done, no sooner was the connecting wire attached, than the patient cried out, demanding what had been done to her. From that time forward she has evinced no difficulty or disinclination to speak, though but little improvement has taken place in her otherwise. Her loquacity is now irrepressible.

Philadelphia, 10th Month 1st, 1838.

MONOGRAPHS.

ARTICLE XII. *On Constipation.* By N. CHAPMAN, M.D., Professor of the Practice of Medicine in the University of Pennsylvania.

THE application of the term constipation, to the condition I am to describe, is comparatively of recent date. *Constipatio*, according to its derivation, *Con* and *stipo*, means to fill up compactly. By the Latin writers of antiquity, *obstipatio*, which comes from *ob* and *stipo*, to stop or close up, was used to express this affection of the bowels. But since these appellations are equally significant, and the first is sanctioned by modern usage, I shall adhere to it.

Good has made *coprostasis* a genus, and divided it into *constipata*, or costiveness, and *obstipata*, or obstipation. The chief difference between them, according to him, consists in the evacuation, in the one being large, and in the other the reverse, small and lumpy. Each, however, depending on the same pathological state, I can discern no just reason for such a distinction. Nevertheless, the affection varies so essentially in some other respects, that to attain perspicuity, I shall have to dispose of it under several separate heads, as will appear in the progress of the inquiry into the subject.

Constipation may be acute or chronic—either a recent occurrence, or a more permanent or habitual state of the intestinal canal. It is the second form only that I shall consider in the present article. This is purely functional, or proceeding, at least, from scarcely appreciable organic lesions—or is owing to structural derangements of the intestinal tube itself, or of other parts intercepting or otherways affecting the alvine discharge. Considered in the former view, which primarily claims attention, I mean by constipation, a preternatural retention of the excrement, which becomes hard and dry, so as to render the evacuation of it slower, and more or less difficult and painful.

Constipation, however, is a relative condition. Cullen deems every deviation from a diurnal opening to be unnatural. But to such a rule, true in the main, there are many exceptions, referable to original or some acquired peculiarities. It is, indeed, very common to meet with persons who eat very little, and that of articles affording no bulk of residuary matter, to pass a week or more without an evacuation, and to experience from the interruption of the function very slight inconvenience. Nor are we wanting in proof of the same immunity from suffering, where the diet was unlimited, and the period infinitely more lengthened—some of which instances are reported to have extended to ten, twenty, and thirty years. But though the more extraordinary of these may be exaggerations of fact, no doubt constipation has endured for a very considerable time, with much less detriment to health than could possibly have been imagined; in evidence of which, Heberden informs us, that he knew a person, who, all his life, had a single motion only a month—and Thomasini states, that he met with another in whom

costiveness, which was congenital, gradually increased from an opening every eight or ten days, to twelve,—and then, in his thirtieth year, to twenty-two days, thus observing the law of periodicity. The man was an enormous eater, consuming double the usual quantity of food. We are further told by the late Professor Rush, of a captain of a packet ship between this port and London, who never had an opening in crossing the Atlantic, and scarcely suffered from the want of it.

Cases of much longer retention, though not with the same impunity, are no less abundantly distributed through our records. Thus by Rhodius, one is related of two months' continuance—by Panarolus, a second, of three months—by Baillie, a third, of fifteen weeks—by Chaptal, a fourth, of four months;—and, what is very remarkable, in the last, with very scanty discharges from the kidneys and skin.

Crampton, of Dublin, has published three cases, in one of which there was no alvine passage for eight months, and during the preceding year, only two or three partial ones;—in which condition, the woman had lived for seven years. In the second case, which had been protracted for several years, “it was considered quite an extraordinary occurrence to have a stool;”—and, in the third, he states, there were rarely any discharges.* By O'Beirne, a case somewhat similar has very recently been given, where no *fæces* were voided for half a year.† Not the least remarkable instance is recorded by Dr. Bache, of this city, in which, for nearly ten months, the bowels were opened only three or four times, and finally recovery ensued. In all these latter cases, vomitings of *fæcal* matter frequently took place, with great distress in other respects.

Nevertheless, this condition, even when there is no very acute or urgent suffering, is generally found to be incompatible with a comfortable existence, and is characterised by a thickly coated tongue, anorexia, nausea, sensations of load and distension of the abdomen, borborigmus, heaviness, vertigo, frontal or occipital headache, cutaneous eruptions, foul breath, and very offensive excretions, with a variety of other results of a highly unpleasant or disgusting nature.

Confirmed into a habit, the foundation is laid of many and more formidable affections;—among which are febrile irritations, irregular circulation, and consequent hæmorrhage, varicose veins, hæmorrhoidal tumours, enteritis, colic, even the iliac passion, inveterate dyspepsia, apoplexy, hydrocephalus, palsy, hysteria, epilepsy, chorea, tetanus, &c. The worst case of tetanoid convulsions which I have ever seen was induced by a collection of cherry stones in the rectum.

The mind shares in this physical disorder, and sometimes to a great extent. Even mania itself has been occasioned by constipation;—and melancholy and hypochondriacism are still more frequent events. Commonly, however, it becomes listless and inefficient as regards all active exertion, with more or less hebetude, and confusion of the senses. The temper, too, is morose, petulant, and querulous.

That the character and disposition may be materially influenced by such a state of the bowels is well established. The celebrated Voltaire, acting on this well known fact, has, in one of the articles of his *Philosophical Dictionary*, very humorously ascribed half the evils of Europe to the intestinal irritations from this source of the public men of the age. “Let the person,”

* Dublin Hospital Reports, Vol. IV.

† N. Amer. Med. and Surg. Jour. No. XII.

he adds, " who may wish to ask a favour of a minister, or a minister's secretary, or kept mistress, endeavour previously, by all means, to ascertain whether they go to stool regularly;—and if possible, to approach them after a comfortable evacuation, that being a most propitious moment, one of the *molliora tempora fandi*, when the individual is good humoured and pleased with all around him."

Causes.—This affection seems sometimes to be constitutional, and especially in cold, phlegmatic or nervous temperaments. Those, too, are very liable to it who are distinguished by the copiousness of other discharges, it being a law of the animal economy, that the augmentation of the one shall be at the expense of the other function;—and, therefore, most apt to occur in hot or cold weather, from the preponderance of the perspiratory or urinary processes.

The habit of study, or occupations of any kind within doors, provided they be sedentary, have a similar tendency;—on which account, probably, the female is predisposed to it more than the male sex. Nearly, however, it is as incident to tailors, cordwainers, weavers, and other like mechanics or artisans, who work permanently sitting. The reverse, or active or steady exercise on horseback, constipates the bowels, or the continued motion of a vessel;—and hence the general complaint to this effect among post-riders and mariners, &c.

Certain ingesta conduce to its production, as the too exclusive consumption of solid animal food, particularly salted or smoked, or of ardent spirits, or port wine. Tobacco is, perhaps, more pernicious in this respect. Numerous are the instances of constipation which I have met with from this article. The primary effect of it, in whatever mode consumed, is rather aperient, and the persistent or inordinate use, directly the contrary.

Equally so is the silly practice indulged by some real or imaginary valetudinarians, of constantly taking medicines, either of a narcotic or purgative character;—and, above all, calomel, to the extent in which it is employed in some sections of our country. No article is so stimulating to the liver;—and the excitement it creates is ultimately followed by torpor and depravation of its secretion, a healthy state of which is indispensable to the peristaltic movements.

The causes, however, of constipation may be seated in other parts, the bowels being affected secondarily by a derivative influence from remote or disconnected sources. Derangements of the liver, as mentioned, by which the secretion of bile is diminished or vitiated, are well known to induce it;—and not less certainly does it proceed from lesions so trivial as not always to be appreciated, of every portion of the nervous system, the brain, spinal marrow, and ganglia, as well as of the nerves themselves—the impression being reflected back on their centres, occasioning a slight degree of the paralytic condition.

As probably acting somewhat in the same way, may here be mentioned, pregnancy, the gravid uterus pressing on the nerves, and also enlargement of other viscera, or the presence of adventitious tumours in the abdominal cavity. These, it is true, do sometimes operate differently, or by overlaying, as it were, a portion of the bowels, pressing together its sides, thereby obliterating or reducing its calibre, to the interception or total prevention of the passage of the stools. Examples of such have been reported by several of the cultivators of morbid anatomy.

Diagnosis.—Constipation is so distinctly marked, that it can scarcely be mistaken, and hence it were useless to indicate its characteristic signs. But

in a practical view, it is very material to discriminate its several varieties;—whether the case be a primary or secondary affection—its causes—the length of its duration—the precise pathological condition at the time—and the aids to such a determination, will hereafter be noticed in their proper places.

Prognosis.—We shall presently see on what grounds our hopes, or otherwise, of a cure should rest. It may now suffice merely to state, that functional constipation, though frequently tedious in the management, is under our control. But, arising from any essential structural alteration, less is to be promised, and, when under these circumstances, often proves utterly irremediable.

Organic lesions.—Of the *post mortem* appearances, in what may be deemed the functional form of the affection, we have no accurate information, owing to the few opportunities of inspection from the rarity of death. But we have learnt that chronic congestion and inflammation of the bowels, particularly of the muscular and peritoneal coats, have been detected;—and, also, that the mucous surface is unusually dry, being alike deficient in the product of the exhalents and follicles. Contractions of the small bowels, seemingly from spasm, and irregular dilatations of the large, independently of any accumulations in these portions, except flatus, have been remarked as common—while some one section of the tube, and mostly of the cæcum or colon, is nearly always heavily loaded with fæcal lodgments.

Next to the bowels, the liver seems to be most generally disordered, sometimes by slight inflammation, though more generally by turgescency or engorgement. Nothing have I ascertained with regard to the brain, spinal marrow, or nerves, which undoubtedly are implicated in many instances of the affection. The tumours and other morbid growths within the abdomen, which have been found in connection with some of these cases, were exceedingly diversified, and need not be described.

Pathology.—Touching the pathology of costiveness, I have in the first place, to repeat a remark formerly made, that it is insisted by some, that the affection is confined to the small intestines, in which opinion I cannot coincide. That from atony of this portion of the tube, the alimentary substances may be retarded in their progress downwards, is readily to be conceived, and, indeed, will be shown to happen, on a subsequent occasion, when I come to the discussion of duodenal indigestion. But this is not constipation in the usual meaning of the term. It is in the colon principally, and perhaps exclusively, that the process of fæcation goes on;—the accumulation of the product of which, from a tardy movement, constitutes chiefly the affection. Taken in the other sense, constipation may undoubtedly be incident to the upper intestines, though it were better to say obstruction, as more accurately designating the condition.

1. Every case of *functional constipation* of a genuine nature, may be referred to one of two states, a diminution of the excitability of the intestinal canal, in part or the whole, or deficiency of bile or vitiation of its properties. To enable the intestines to perform the office of propelling their contents, the circumstances required are, susceptibility to action, and a stimulus to excite it, which is mainly the bile;—the want of either, of course, impairing the function. That a third cause, I am aware, has been assigned in the rapid absorption of the thinner portion of the fæces, by which the residue becomes firm, and is detained. But it is to the torpor of the intestines, of which I have spoken, allowing their contents to be so

* Vide Essay on Chronic Fluxes, in the No. of this Journal for Nov. 1836, p. 86 *et seq.*

long retarded in their passages, that such an effect should be referred. This torpor of the bowels is ascribable to an interruption in the supply of that nervous influence by which susceptibility is conferred. It is not unlikely, that each set of nerves, those of sensation as well as the motory, are affected, having seen cases of constipation in which this general loss of nervous power was very unequivocally manifested. Granting the co-operative concern, which has been contended for by some, and I am not disposed to question it, of the intestinal secretions in the promotion of this office, their suppression or depravation must still be considered merely as a subordinate part of the same effect just mentioned, from the irregular distribution of the nervous energy.

Treatment.—In the cure of constipation from disordered function, the leading indication is to endeavour to ascertain the immediate origin of the affection, whether it proceeds from the one or the other of the two conditions by which it is alleged to be produced. Much is to be expected, when susceptibility is deficient, from electricity or galvanism, if the report of their efficacy can be credited, on some of the best authorities of Europe and this city. Taking these agencies to be identical with nervous energy, or excitants of it, which latter especially has been assumed as a fact, the induction is held to be legitimate, that they should succeed in disease caused, or kept up, by a diminution of this influence. But plausible as they may seem, I confess that I have witnessed, on trial, no extensive verification of these fair promises. Even admitting the principle maintained, it so happens that many of these cases, though not ostensible, proceed from lesions of the nervous centres of a nature not to be removed by such agency.

Greater advantage have I derived in very obstinate attacks, from cups or leeches and counter-irritants to the spine, placed as the upper, lower, or intermediate parts may appear to be affected, with the concurrence of the daily use of the warm bath, and frictions over the back and abdomen.

But from ten drops of the radical tincture of colchicum, repeated several times in the twenty-four hours, and persisted in for some time, as much may be anticipated with a view merely to the restoration of the lost susceptibility of the bowels, as from any thing else within my experience, rarely, indeed, having seen it to fail. It is essential, however, to its success, that the dose be small, and this is a precept to be observed in relation to all medicines in this form of constipation, the object being attained rather by gradual insinuation, than a forcible impression.

Most important is it, especially in resorting to purgatives, that the drastics be avoided as calculated further, by stimulation, to expend susceptibility. Every one is familiar with the fact, that the tendency of such articles is to costiveness, and by repetition of them, the habit becomes established. Castor oil or the neutral salts, or some one of the mildest aperients, are to be selected. Employing any of the salts, it should be in free dilution. Dissolved in half a pint of water, a drachm of them is as effectual, as three times the quantity differently prepared. Their potency is also increased by uniting several of them together, the sulphates of soda and magnesia, the muriate of soda, &c., as well as that, the operation is rendered milder or less irritating. It is owing to this combination of several salts, in free dilution, that the waters of our purgative mineral springs, are so much more active than might be presumed from the small amount of ingredients of this description, they are shown to contain on analysis.

Great advantage have I known to result from eating daily a few prunes prepared in the mode I am now to direct. To a pint of an infusion of senna,

add half a pound of fresh prunes, and three ounces of sugar, and these simmer slowly till they are thoroughly softened. The impregnation of the senna, gives considerable efficiency to the prunes, without any of its disagreeable taste or griping quality.

To some of these cases, rhubarb is exceedingly well adapted. Even by chewing occasionally a small chip of the root, and swallowing the saliva, the bowels are preserved soluble. But when more activity is demanded, two or three of those pills partly composed of rhubarb, may be taken every night, which from the gentleness of their operation, have acquired the quaint title of *peristaltic persuaders*.*

Concerning the second form of constipation, dependent on disorder of biliary secretion, chiefly distinguishable from the preceding, by the peculiarity of the character and aspect of the stools, it is desirable, previously to entering on the treatment, to determine the exact nature of the hepatic derangement, since, to the rectification of this, our attention is primarily to be called. Commonly, however, in recent cases, there is simply congestion of the portal circulation, to be removed by general or local blood letting, with perhaps some counter irritation and mercurial purging. This engorgement having been overcome, without adequate relief, a resort may be had to the laxatives I shall now enumerate. They are a mixture of sulphur and magnesia, of which a couple of teaspoonsful may be taken on going to bed, or a wine glassful of a solution of coarsely powdered brimstone, with half an ounce each, of the sulphates of soda and magnesia, and the muriate of soda, in a quart of water. Exceedingly efficacious are these preparations, though objectionable to some, from their nauseousness. In this event we cannot probably do better than recur to some of the combinations of rhubarb, and above all to the *peristaltic persuaders*. Yet I have seen the extract of the butternut, (*Juglans Cinerea vel Juglans Cathartica*), four or five grains at a dose, answer very well, and the same amount of the alkaline extract of jalap has lately received very strong commendation, which, from my own trials of it, I do not think it deserves.

By the older practitioners, the aloetic preparations were employed under the supposition that, from the intense bitterness of the medicine, and some other properties, it might be substituted for the bile. This is not true;—and besides which, the habitual use of aloes is supposed to produce, or aggravate the hæmorrhoidal affections. Now and then, however, we add aloes to rhubarb and other articles.

With the same view, the bile of the ox has been prescribed, and is strenuously commended by Richter, and several other writers. That it is sometimes beneficial, at least as a laxative, my own observations have satisfied me. The bile is to be inspissated over a sand bath, and then made into pills.

Charcoal has acquired some repute in constipation, without, however, any discrimination in the application of it. Taken largely, it will purge with some activity. Of this fact I was aware, before I had read any thing on the subject, having several times prescribed it for the purpose. The case to which it is best suited, is where the tongue is thickly coated, the mouth clammy and out of taste, and the breath heavy and offensive, which it corrects. The power of charcoal in destroying the odour of substances is very extraordinary. Completely does it divest the fæces of their bad smell;—and

* The following is the prescription for the "Peristaltic Persuaders:" R.—Pulv. rhei ʒi.; Pulv. ipecac. gr. x.; Oleum carui. gr. x.; Gum arabic, q. s. Ft. mass. et div. in pill. xx. Two or three of these are to be taken every night at bed time.

long has it been known to have the same effect on offensive ulcers, and indeed on any odourous article, as musk, assafoetida, &c.

Constipation, not yielding to the foregoing measures, it may be concluded that the habit is strongly confirmed, and we must appeal for its subversion to the revolutionary power of mercury. This is serviceable in either state, whether proceeding from a loss of sensibility in the bowels themselves, or caused by hepatic disorder, though it is more particularly so in the latter case. Experience has taught me that the practice most successful under such circumstances, is to give the blue pill every other night, and work it off the next morning with a mild laxative.* Mercury need not be urged to the point of salivation; though properly moderated, it is not prejudicial. Nearly in the same way does the nitro-muriatic acid operate, by the promotion of biliary and intestinal secretions, exhibited internally, and applied as a pediluvium, or as a lotion—the latter modes being preferable.

2. *Constipation from organic lesions of the nerves.*—We pass to the consideration of some other states of this affection, differing very widely in their causes, nature, and general features. Not the least interesting of these, is the one proceeding from structural lesions of the nervous system. Constipation of this sort is mostly indicated by pain or uneasiness of the head, or about the loins, and around the abdomen—by strangury or an entire suppression of urine, and by diminished power in the inferior extremities, or at least by numbness and reduced sensibility. Not often is there any intensity of pain in the bowels themselves, however loaded they may be, though when thus oppressed by faecal collections, the most distressing retchings or vomitings sometimes take place. Examples, however, I have witnessed, without these, or, indeed, any strong or unequivocal expression of suffering whatever.

Causes.—To blows, falls, and other acts of violence received by the head, or vertebral column, it may often be traced;—and scarcely less so to lesions of the spinal marrow, attended by obvious manifestations, or otherwise, the mode of origin of which may not be always ascertainable. Consequent on saturnine colic, occurrences of it are familiar, and I have seen it in three instances to follow ordinary or flatulent, and still more frequently, bilious colic.

Diagnosis.—Embarrassment will be encountered on some occasions, where the lesion is not prominent or obvious, in determining its origin, whether in the brain, spinal marrow, or the ganglionic nerves, owing to the commonalty, or at least a closeness of resemblance of symptoms in these affections. Chief reliance must be placed on a careful investigation of the history of the case, and a comparison of its phenomena with those of the affections having the nearest affinities. Generally, however, it is primarily seated, or becomes very conspicuously developed in the spine, and then is clearly denoted by a protuberance of one or more of the vertebræ, or in the absence of such, by tenderness on pressure, or by percussion.

Treatment.—It is only in the more moderate of these cases, or where no great injury has been done, that we can hope to be of much service. The condition is that of paralysis of the lower bowels, of various gradations, some of which admit of little else than mere palliation. In those, however, which hold out any reasonable encouragement, the remedies ought to be directed mainly to the point that appears most deeply concerned in maintaining the disease, consisting of local depletion and counter-irritation. Contrary to

* The following is a very appropriate mixture : Infus. Tarax. ℥iv; Extr. tarax. ℥ij; Carb. sodæ ℥ss.; Tart. potass. ℥ij; Tinct. rhei ℥ij. M. The dose is a wine-glassful.

what was proposed in the functional state of the affection, it is here that I have derived advantage from purging with the energetic articles, the best of which are castor oil, with the addition of the spirit of turpentine,—the croton oil, or the elatin;—and after such a course, from the white mustard seed, so given as to keep the bowels open. Enemata of some stimulating ingredients may be useful, though alone not often effectual.

3. *Constipation from disorganisation of liver.*—Of constipation unequivocally dependent on positive disorganisations of the liver, I have very little to say. The leading symptoms are those of hepatic disorder;—and such as specially appertain to the intestines are no exceptions. An absence of bile is uniformly betrayed by light clay or slate-colour stools, consistent, or even solid, though seldom hard or lumpy. Essentially must the prospect of cure depend on the character of the hepatic lesion, which is diversified in kind and degree. For the treatment, I shall be content to refer to what was said of the functional variety of this affection, it being very nearly the same.

4. *Constipation from mechanical obstruction of the bowels.*—Constipation remains to be considered which proceeds from mechanical obstructions of the bowels, owing to accumulations of foreign matter or fæces, or to organic lesions, or adventitious growths of several descriptions. Thus, among other instances of the former which might be cited, Koning, of Berne, relates that of a woman who had her intestines loaded with stones as hard as flint, of every size, from a pea to a filbert, the clashing of which could be distinctly heard. These were finally voided. Brande and Graves each, gives cases of similar obstruction from magnesia, cemented into a large ball by the mucus of the intestines;—and Elliotson another, by a lodgment of the carbonate of iron, both of which articles had been long and largely used. Two instances I have met with in my own practice, the first from cherry-stones, and the second from the coagula of milk, in the former to the amount of a double handful, and in the latter to nearly eight pounds.

The fæces sometimes accumulate in distinct indurated scybilla, or in enormous masses solid and compact. Taunton, a surgeon of London, has a preparation of the colon and rectum of more than twenty inches in circumference, containing three gallons of fæces, taken from a woman, whose abdomen was as much distended as in the maturity of pregnancy. By Lemazurier, another case is reported of a pregnant woman, who was costive for two months, from whom, after death, thirteen and a half pounds of solid fæces were taken away, though a short time before, between two and three pounds had been scraped out of the rectum.*

Cases are reported by Professor Graves, of Dublin, which he saw in women, where from the great distension in certain directions of the abdomen, the one was conjectured to be owing to a prodigious hypertrophy of the liver, and the other of the ovary;—in the latter of which he removed “a bucket full of fæces in two days.”

Constipation of this kind is incident to females mostly;—and, with the ordinary phenomena of the condition already noticed, there is associated much local uneasiness, with which the uterus sometimes so greatly sympathises, that it may be mistaken for an affection of that organ. The pain and distress are very similar to that endured in the worst forms of difficult menstruation. The connection of the rectum with the uterine system, and its dependencies, is, indeed, of such an intimate nature, that we are told, in some instances, from the mere irritation of this portion of the bowels, by

* Archives Générales, Tom. IV., p. 410. Paris, 1824.

habitual constipation, the womb enlarges, the mammæ swell as in gestation, and finally secrete milk. Diarrhœa is occasionally an attendant on these cases, which renders them perplexing, or may lead to a total misapprehension of their nature. It is caused by the irritation of the indurated fæces worrying the bowels to increased secretion or exhalation.*

Treatment.—In the management of this variety of constipation, it may be necessary from the mass of indurated matter, to remove it by a scoop, adapted to the purpose, or by the handle of a spoon, and then administer the aloetic preparations, variously compounded, so as to make a specific impression on the lower bowels.† Enemata, however, will sometimes supersede purgatives;—and, in this particular instance, an infusion of horse-radish, or mustard, merits attention. By the introduction of a suppository of tobacco into the rectum, to remain for a few minutes, I have known speedy relief to be afforded, and, from the daily repetition of the remedy, some cures effected. But, inasmuch as a portion of these cases is referable to paralysis of the bowels, we ought to be mindful of the fact, and be governed accordingly in the management of them.

5. *Constipation from structural lesions of the bowels.*—Constipation, I have said, may be occasioned by structural lesions of the bowels. These consist of thickening of the coats of the tube especially about the ileo-cæcal valve, from previous inflammation, or tumours of various kinds, or strictures which diminish its calibre, in various gradations, to nearly its obliteration. The latter alone being susceptible of any effective management, will exclusively engage my attention. The stricture is commonly seated in the rectum, though sometimes also in the colon.

Symptoms.—On its attaining maturity, the symptoms of the case are pretty much those of torpor of the lower bowels, and particularly of the rectum. There is local uneasiness, or positive pain, with distension of the abdomen, oppression of the stomach, flatulence, eructations, colic, frequent vomitings, sometimes even of stercoraceous matter, micturition, or entire suppression of urine, and occasional diarrhœa from irritation of the intestine. Considerable aches in the groins, loins and lower extremities, are also experienced, and in some instances, confirmed dyspepsia ensues, attended by violent paroxysms of headache, palpitations of the heart, interrupted pulse, and syncope;—the latter affections most probably induced by the pressure of the accumulated contents of the colon on the vena cava, or aorta.

In the progress of such a case, when the stricture degenerates into scirrhus or ulceration, a new train of symptoms arises of a less equivocal character, and finally the whole system becomes involved in universal cachexy, and death takes place after long and excruciating sufferings.

Diagnosis.—Two circumstances will aid us in distinguishing this from any other form of constipation, and especially when the stricture is somewhat advanced. There is an unusual degree of tenesmus with excessive straining, and the indurated fæces conform in their shape to the figure of the aperture through which they are squeezed, being generally either flattened and elongated like a piece of tape, or triangular, or cylindrical, with a distinct indentation in the centre, from the compression of the stricture. Yet, though generally, this peculiarity of the fæces does not always, exist. They sometimes come away in small balls, snapped off by the stricture. In other

* Fothergill's Works, Vol. II, p. 100.

† R.—Pulv. Aloes, ʒi.; Jalap. ʒss.; Calomel, gr. xv.; Extr. Colocynth. Comp. gr. xv.; Pulv. Ipecac. ʒi.; Sap. Hispan: q. suf. Ft. mass. Div. in pill. xl.

cases, the stricture being above the rectum, the *faeces* pass through it, and become subsequently moulded, or collect in a large lump, to which may be added, that, on the operation of purgatives, though the discharge may be copious, relief is not always afforded—the sense of a retention of a load above the stricture, continuing to harass—to further efforts for its expulsion.

Notwithstanding, however, these diagnostics, I have known several times the most serious blunders to be committed. It will be right, therefore, where embarrassment exists, to make an actual examination, which, for the most part, is easily done as regards the rectum, by the finger, or if not within its reach, by a bougie. Even when high up in the colon, this same instrument may enable us to reach the stricture. But such cases enter into the province of surgery, to which I resign them with this single comment, that they are of more frequent occurrence than generally suspected, and hence deserving of careful attention.

Regimen, &c.—Essential to the cure of constipation, is the regulation of the regimen. As to diet, all articles of an astringent nature are to be avoided,—solid animal food to be sparingly allowed, and the aperient vegetables and fruits most freely used. Crackers are particularly injurious, and the best bread is that made of unbolted flour, or bran bread, as it is called. Dried fruit, figs, or prunes, or peaches, the two latter stewed, are very suitable, and so is corn or rye mush and molasses. The best drink is syrup and water, or simple water; and above all, ardent spirits and port wine are inadmissible.

It will be right to insist on a change of the habits of indolence, or sedentary employments, for moderate exercise, especially by walking.

Further, with a view of soliciting the restoration of the natural office of the bowels, we should recommend a daily effort to be made to procure a stool, whether an inclination is felt or not, by repairing to the ordinary place for this purpose;—and while thus engaged, the process may be greatly promoted by kneading the belly for some ten or fifteen minutes. It is a common remark that we are the creatures of habit, and, perhaps, in no instance, is it more strikingly illustrated than in relation to the case before us.

Lastly, be it remembered that constipation is one of those affections, over which the waters of several of our mineral springs have a very extraordinary control. Those of Saratoga, New-York, of Bedford, Pennsylvania, and the White Sulphur, of Virginia, are of the highest reputation. But I am inclined to believe that the water of the Warm Springs, in the vicinity of the latter, is more efficient as a purgative, and from the advantage of its incomparable bath, peculiarly adapted to that form of the disease in which the nervous system is concerned. Nor are those of the Hot Springs, of the same neighbourhood, without decided utility. Be their comparative merits as they may, they all afford so valuable a resource, that I have known them in some instances to render great, or even entire relief, where our skill had proved nugatory.

REVIEWS.

ARTICLE XIII. *Des Maladies Mentales, considérées sous les rapports Médical, Hygiénique et Médico-Legal.* Par E. ESQUIROL, Médecin en chef de la Maison Royale des Aliénés de Charenton; Ancien Inspecteur-Général de L'Université; Membre de L'Académie Royale de Médecine, etc. Accompagnées de 27 planches gravées. Tom. 2, in 8vo, avec atlas. Paris. Chez J. B. Baillière. 1838. pp. 678 & 864.
On Mental Diseases, &c. By E. ESQUIROL.

ESQUIROL has long been the highest authority on every thing relating to insanity. No one else has had such ample means for acquiring information respecting this disease. His life has been devoted to its study, and most of it passed among lunatics. The present work consists of his various writings on mental diseases, most of which have heretofore been published in the *Dictionnaire des Sciences Médicales*, or in separate treatises.

The author has now revised them all, and added to them much important matter, so that the two large volumes thus collected and published, accompanied by numerous plates, or well executed portraits of epileptics, maniacs, demonomaniacs, idiots, cretins, &c., &c., affords altogether the most valuable collection of facts on insanity ever given to the world. "The work which I now offer to the public," says the author in the preface to the first volume, "is the result of forty years study and observation—during which time I have watched the symptoms, studied the manners, the habits, the wants of those mentally deranged, in the midst of whom I have passed my life. Confining myself wholly to facts, I relate such as I have seen, rarely seeking to explain them; and have passed unnoticed systems and theories however seducing, that are not useful in application."

It is true that many of these facts have been made known to the profession, by the treatises of others on insanity, as most late writers on this disease have availed themselves largely of the observations of Esquirol.

The work is divided by the author into three parts. In the first part, he treats of insanity in general, and its varieties. In the second, of the statistics of insanity, and of hospitals for the insane; and, in the third, of mental alienation as connected with jurisprudence.

The first part is divided into fourteen chapters, in which the following subjects are separately discussed: 1. Insanity in general, its symptoms, causes, treatment, &c; 2. Hallucinations; 3. Illusions, or errors of sense; 4. Of fury; 5. Puerperal insanity; 6. Epilepsy; 7. Critical terminations of insanity; [8. Melancholy, (*Lypémanie*,) its symptoms, causes, &c.; 9. Demonomania; 10. Suicide; 11. Monomania and its varieties; 12. Mania; 13. Dementia; 14. Idiocy.

The second part consists of five chapters, in which the following subjects are noticed: Hospitals for the Insane, and means of improving them; History and Statistics of the Hospital for Lunatics of Charenton, from 1641 to 1834;

Account of the Village of Gheel; and an answer to the question, is there a greater number of insane at the present time, than forty years since?

The third part consists of a Memoir on the Isolation of the Insane; another on Homicidal Insanity; and Remarks on the signs of death from hanging.

In noticing this work, we shall follow the preceding order, adding to an analysis of each chapter such facts and observations as we may deem important.

The first chapter is on Insanity in general, and is a summary of the author's views of this disease, and of the facts he has collected relating to it.

Symptoms of Insanity.—Insanity or mental alienation is a cerebral affection, *ordinarily* chronic, without fever, and characterised by disorder of sensibility, intelligence, volition; or, in other words, the thinking faculty, the moral affections, and the sensations, are deranged and perverted. Sometimes but one sense is affected, often two, rarely more, though occasionally all. The sight and hearing are most frequently disordered. Some do not recognise their most intimate friends, others imagine they hear voices perpetually calling them. The taste and the touch are sometimes perverted, and also the sense of smell. Many are so disturbed by the exuberance of ideas, produced by the multiplicity of their sensations, that they cannot compare and judge of them correctly. Others perceive sensations but feebly, and retain the recollection of them but for a moment. In some cases the power of the will seems to be lost; and then the person is not master of his own determinations, but impelled by his impressions—by an irresistible impulse, does things he himself abhors.

The insane are usually timid, distrustful, and suspicious. One of the most common characteristics of insanity, is aversion for their most dear relatives and friends. The vital powers of some insane are greatly exalted, enabling them to resist external influences, such as exposure to the coldest atmosphere, without injury. In others, the muscular power is vastly increased, and some will endure fasting for many days in succession, and yet preserve their muscular energy. Such instances, however, are quite rare.

Maniacs and monomaniacs, and the melancholic, sleep badly, often not at all for days and nights in succession; and, when they do, are troubled with frightful dreams and incubus. Imbeciles and the demented sleep almost constantly. Constipation is very common among the insane; and their excretions acquire a peculiar odour, which penetrates their clothing and the furniture of their rooms, and which nothing can destroy.

Esquirol makes five varieties of insanity. 1. *Lypémanie* or melancholy, delirium on one subject, or on a small number of subjects, with predominance of some sorrowful and depressing passion. 2. *Monomania*, in which the delirium is limited to one object, or small number of objects, with excitement and predominance of cheerful and expansive feelings. 3. *Mania*, in which the delirium extends to all things and objects, and is accompanied by excitement. 4. *Dementia*, in which a person is rendered incapable of reasoning, because the organs of thought have lost the energy and force requisite to enable them to fulfil their functions. 5. *Imbecility* or *idiotcy*, in which the organs of thought have not been so formed as to enable them to reason correctly. Though several of these varieties may be observed in the same individual at different periods, yet they are too distinct to be confounded.

Causes of Insanity.—These are numerous and dissimilar. They are general or particular, moral or physical, primary or secondary, predisposing or exciting; and climate, season, age, sex, temperament, profession and

manner of life, laws, civilization, manners and political condition, all have an influence on the frequency and character of this disease.

Climate.—There is less insanity in hot climates than in temperate, subject to great atmospheric vicissitudes, though the influence of climate is less than is generally supposed.

Seasons.—Extremes of heat and cold, especially sudden and extreme heat, produces insanity. The character of this disease often changes with the season; there is usually more excitement and uproar in lunatic hospitals about the equinoxes, and during great atmospheric commotions.

From tables kept at the Salpêtrière, it appears that the admissions of lunatics are most numerous in May, June, July, and August, less so from September to December, and least in February and March. Esquirol does not believe the moon has any other influence upon the insane, than is produced by bright light; they are more agitated at the time of the full moon, and also at day break every morning. Light agitates all, pleasing some, and frightening others. Some writers believe insanity is at times epidemic, and it is certain that some years, independent of moral causes, it is much more frequent than in others. Moral causes often render it quite general or contagious.

Age.—Infancy is nearly exempt from insanity. Frank saw, at St. Luke's, in 1802, a child that had been insane from the age of two years. Esquirol has had charge of a few insane children eight and nine years old. At puberty the causes of insanity are multiplied and the cases are much more frequent than previous to that time. The following table, from the late report of M. Desportes, exhibits the ages of 8272 patients admitted into the Salpêtrière and Bicêtre Lunatic Hospitals from 1825 to 1833:

From 10 to 19 years of age,	626
20 " 29 "	1568
30 " 39 "	2024
40 " 49 "	1683
50 " 59 "	1051
60 " 69 "	782
70 " 79 "	484
80 " 89 "	8
90 " 99 "	2
Age unknown	15

The greatest number it appears was from 30 to 39, but as individuals of this age are much more numerous than those more advanced, it is not certain that the former number is the largest in proportion to the number of persons existing. Esquirol inclines to the opinion that the longer men live after maturity, the more liable they become to mental derangement.

Sex.—From an examination and comparison of numerous statements respecting the number of the insane of each sex, it appears there is no great disproportion or none other than prevails among the sane population. Our author thinks there are more insane females in France than males, but in most other countries the fact is the reverse, although the difference as to sex is not great. According to the researches of Esquirol on this subject, of 76,526 lunatics in various countries, 37,825 are males, and 38,701 females. We are confident that the result would be different if the insane of all civilised countries could be ascertained; as in England,

Italy, Germany, and the northern states of Europe and in the United States, there are more male than female lunatics.

Temperament.—Those of the sanguine temperament are disposed to mania; those of the nervous temperament to mania and monomania. Those in whom the abdominal viscera predominate are most liable to melancholy. In general those that have black hair, and who are strong and robust and of the sanguine temperament are maniacs and furious. The course of insanity with such is more rapid. Those with light-colored hair, blue eyes, and of the lymphatic temperament, on becoming maniacs or monomaniacs, more frequently pass into dementia. Those with black hair and eyes, and of the nervous temperament, are most generally melancholic. Individuals with red hair, on becoming insane, are furious and dangerous.

Professions, Manner of Life and other Causes.—We have seen in the reports of lunatic hospitals, tables of the professions and employments of the inmates previous to their insanity, but from none can any satisfactory results be derived, for want of knowing the number of each profession in the sane population. Besides, the character of the institution, whether for the rich or the poor, the employment and degree of mental cultivation of the inhabitants in the midst of which it is situated must prevent any uniformity as to professions in the different institutions. In all, however, it is evident that the laboring classes which in all countries are far the most numerous, are least subject to insanity. At the Richmond lunatic asylum for paupers in Ireland, the laboring class does not furnish one-fourth of the inmates; at the lunatic asylum at Aversa, Naples, about one-half, and at the Charenton, Paris, nearly the same proportion. At the Massachusetts State Lunatic Asylum at Worcester the proportion of laborers is far greater. Is this not owing to the superior mental cultivation and the greater mental activity of this class in this country compared with the same class in Europe?

Sometimes commercial and political commotions produce a large increase of insane of one profession, as in Paris the number of insane *Propriétaires and Rentiers* was greatly increased when political events alarmed this numerous class. Cities, according to their population, furnish more insane than the country, and in all countries a majority of lunatics are unmarried.

Insanity is confined almost exclusively to the civilised races of men. It is nearly unknown among the uncivilised and uneducated Indians and negroes. It is uncommon in China, Persia, Hindostan, Turkey, and Russia, and there is but little in Spain and Portugal, while it prevails to a great extent in England, France, Germany, Norway, Holland, and the United States. In all countries it is increased by events that excite deep and general feeling among the inhabitants. The French Revolution increased it in France, the American Revolution in this country. The reformation of Luther, the noted South Sea Speculation in England about 1720, and the wars of Bonaparte, augmented the number of the insane. When Napoleon made and unmade kings and queens with great rapidity, kings and queens increased in the madhouses of France. When the Pope came to Paris, an event that excited the religious community of that country, cases of religious insanity became more numerous. "So great has been the influence of our political commotions," says Esquirol, "that I could give the history of France from the taking of the Bastille to the last appearance of Bonaparte, by that of the insane of the hospitals, whose delusions related to the different events of that long period of history."

Erroneous modes of education are, we apprehend, very powerful in increasing the susceptibility to mental derangement. "There are two different points of view," says Prichard, in his excellent *Treatise on Insanity*, "under which the injurious effects of wrong education may be considered. By too great indulgence and a want of moral discipline, the passions acquire greater power, and a character is formed subject to caprice and to violent emotions: a predisposition to insanity is thus laid in the temper and moral affections of the individual. An overstrained and premature exercise of the intellectual powers, is likewise a fault of education which predisposes to insanity as it does to all other diseases of the brain."

Other causes which appear to be quite operative in producing insanity, especially of late years, and in this country, deserve notice.

Intoxicating liquors.—The immoderate use of intoxicating drinks is a much more frequent cause of insanity in the United States, in England, Ireland, and Germany, than in France, Italy, and Spain. Of 1264 lunatics admitted into the Charenton, from 1826 to 1833, 134 were rendered insane from the use of intoxicating drinks; a far greater number in proportion than were attributed to this cause in previous years. Esquirol says, that in his private establishment for the insane, out of 330 lunatics, in only *three* could the disease be attributed to the use of stimulating drinks, and one of these he believed became intemperate in consequence of insanity.

"In the public Lunatic Asylums in England," says Dr. Prichard, "it is generally known that, in a great proportion of cases, dram-drinking is the exciting cause of the insanity." In the Richmond Lunatic Asylum, Dublin, one-fifth of all the cases are caused by intoxication. Of 608 insane persons at this institution, 74 men and 12 women were supposed to have become mentally deranged from this cause.

In the Massachusetts State Lunatic Hospital, at Worcester, according to the late able and interesting report of the superintendant, Dr. Woodward, about one-fifth of the cases are attributed to this cause, or 129 out of 678. He adds, however, "the proportion of cases, from this cause, has been very perceptibly decreasing for the last two years." But it should be recollected that this excellent hospital is for pauper lunatics; other asylums for the insane in this country do not receive so large a proportion of patients rendered insane by intemperance. At the Connecticut Retreat for the Insane, at Hartford, of 116 patients only *two* are stated in the report for 1834, to have been rendered insane by "intemperance," and *two* others by "dissipation and exhaustion, consequent upon dissipation."

Masturbation.—"This," says Esquirol, "is a more frequent cause of insanity than is generally supposed," still he assigns but 52 cases to this cause out of 1264 lunatics at Charenton.

By the Report of the Massachusetts State Lunatic Hospital, at Worcester, it appears that *one-ninth* of the cases of insanity at that institution were caused by masturbation, that is, 63 males and 12 females out of 678. In other asylums we find this cause seldom assigned. At the Connecticut Retreat, out of 116 patients, only one is attributed to masturbation, and one to intermittent fever and masturbation. At the Aversa, near Naples, but *three* cases are supposed to have arisen from this practice, and at other institutions this cause is not assigned for any cases of insanity. This subject, we believe, deserves more attention than it has hitherto received. Esquirol says, the practice predisposes to epilepsy, and is more fatal to men than women; he also observes, that though it does not so often cause

mania as other varieties of insanity, yet it is apt to prove fatal when combined with mania, and if not promptly arrested proves an insurmountable obstacle to the cure of the insanity, and leads to stupidity, phthisis, marasmus and death.

Insanity is eminently an hereditary disease. Of 1264 admitted at Charenton, 337 were hereditary. At Worcester, of 678, "*two hundred and ten* had insane ancestors or near kindred." It is surprising that in some institutions we find this cause rarely assigned. In the last Report of the Richmond Lunatic Asylum, Ireland, by Dr. Mollan, of 608 cases, only eight men and five women are said to be hereditarily insane. Insanity is produced by various other causes, both physical and moral, but we have alluded to the most important.

Progress of Insanity.—Sometimes insanity attacks suddenly, but usually it is preceded by functional derangements, indicated by headache, spasms, constipation, irregular menstruation, and by eccentricities of temper, sudden bursts of passion, irresolution, indifference, &c.

It is continued, remittent or intermittent. It terminates in various ways, sometimes suddenly by resolution, at others by the predominance and activity of the absorbent system; the patients becoming very fleshy and the insanity ceasing as the obesity increases. Some, on the contrary, do not recover until they have lost much flesh and become greatly emaciated. The appearance of the menses restores some, the cessation of the menses others. But the terminations of insanity will be more freely alluded to in the chapter on the critical termination of insanity.

Curability of Insanity.—From numerous tables of admissions and cures in different Lunatic Hospitals, for the last half century, it appears that about *one-third* are cured. Cures are, however, more frequent of late years than formerly, probably because the proportion of recent cases is greater.

Nothing is better established than the fact that most cases of recent insanity may be cured. Dr. Willis, in his evidence before a committee of Parliament, in 1789, averred, that *nine* out of *ten* cases of insanity recovered, if placed under his care within three months from the first attack. Dr. Burrows has reported, from his own experience, 221 cures out of 242 recent cases, affording a proportion of 91 in 100. Dr. Ellis, director of the York West Riding Lunatic Asylum, in England, stated in 1827, that of 312 patients admitted within three months after the commencement of the insanity, 216 recovered.

Mr. Tuke, of the Retreat near York, observes, "according to the result of our experience, I should say the probability of recovery from uncombined insanity, in recent cases, is somewhat greater than *nine* to *one*." Several other hospitals for lunatics in England, established within a few years, have been equally successful in curing recent cases of insanity.

Some of the asylums in this country are not behind those of England in this respect. By the report of the Bloomingdale Asylum, near New-York, it appears that of 125 recent cases, 93 were cured. At the Connecticut Retreat, at Hartford, previous to the 1st of April, 1836, there had been received 328 recent cases, of which 274 recovered. Other institutions have been about equally successful in curing insanity in its early stage.

The following table exhibits the admissions and the number of cures of all cases, at different hospitals for the insane, in various countries and periods :

French Lunatic Asylums.

	Dates.	Admissions.	Recoveries.
Charenton, from - - -	1798 to 1803	596	194
" " - - -	1826 " 1834	1205	516
Salpêtrière " - - -	1801 " 1813	3007	1625

English Lunatic Asylums.

In Bethlehem Hospital, from -	1684 to 1703	1294	890
" " " -	1748 " 1794	8874	2557
" " in -	1813	422	204
" " from -	1819 " 1833	2445	1124
In St. Luke's " " -	1751 " 1801	6458	2811
Wakefield county Asylum " -	1819 " 1826	917	384
Lancaster " " " -	1817 " 1832	1750	697

Italy.

Aversa Asylum, near Naples, from	1813 to 1833	3897	1514
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United States.

Pennsylvania Hospital, from	1752 to 1836	4116	1349
New-York Hospital " "	1791 " 1821	1553	704
Bloomington Asylum, N.Y., from	1821 " 1835	1915	828
McLean Asylum, Mass., " "	1818 " 1834	1015	362
Connecticut Retreat for Insane, " "	1124 " 1836	658	346
Mass. State Lunatic Hospital " "	1833 " 1838	678	267

Some of these institutions receive incurables, paralytics, epileptics, and idiots, others do not admit any deemed incurable. Hence one reason why there are more cures at one institution in proportion to the number of inmates than at another.

Mortality.—The deaths, like the cures, of the insane, vary considerably in different Asylums. Of itself, however, insanity is not very dangerous to life. At the *Salpêtrière* and *Bicêtre*, in France, are patients that have been deranged above fifty years, and it is not uncommon to find several, in most lunatic hospitals, that have been insane fifteen, twenty, and thirty years.

According to Esquirol, the deaths at Charenton, from 1826 to 1833, amounted to 546, out of a population of 2049. This, at first, appears like a great mortality, but it should be recollected that recent cases are rarely admitted at Charenton, but on the contrary the most incurable are; above one-sixth of those admitted are affected with general paralysis, which soon terminates fatally. At Aversa, Naples, the deaths during twenty years amounted to 1222, the admissions for that period being 3897.

At the Pennsylvania Hospital, of 4116 admitted from 1752 to 1836, 548 died, and at the New-York Hospital, from 1791 to 1821, 1553 lunatics were received, of which number 154 died. At the Bloomington Asylum, out of 1915, 146 died, from 1821 to 1835. At the Massachusetts State Lunatic Hospital, at Worcester, of 678 admitted, but 37 have died.

It is quite evident that in the lunatic hospitals, established of late years, the mortality is much less than in the old establishments, and it also appears that the cures are more numerous.

Relapses.—Many entirely recover from insanity, and never after exhibit any tendency to the disease, or any impairment of their mental powers; others only partially recover vigour of mind, though they are no longer insane. Some are subject to a recurrence of the disease, but relapses are not very common, if the patients are completely cured before they are permitted to join their friends and engage in business. According to

Pinel, out of 444 recoveries, 71 relapses took place. Esquirol noticed 292 relapses out of 2804 recoveries; and at the Aversa, Naples, the disease recurred in 61 cases out of 1514 cures. Much may no doubt be done towards preventing a recurrence of this disease, by avoiding every thing likely to excite the mind or awaken painful feelings, and by attention to the general health.

Pathology.—We do not consider Esquirol the best authority on this subject, and for the following reasons: More than twenty years since, before pathology was well studied, and when the anatomy of the brain was not as well understood as at the present time, he wrote as follows: “In numerous and accurate dissections of the insane, no alteration whatever from the healthy structure could be discerned; dissection has shown every part of the encephalon disorganised, suppurated or otherwise destroyed, without any derangement of the understanding; and there are cases of insanity where the disease has not its seat in the brain, but in various other foci of sensibility.” The tendency of his writings at that period, was to discourage all hope of learning any thing of importance respecting insanity or the functions of the brain, by pathological researches.

We are pleased to see in this edition of his works, that his views have somewhat changed on this subject, as he says, “modern researches permit us to hope for more positive, clear and satisfactory notions respecting the seat of insanity, and the organic lesion connected with this disease;” and again he says, “the post mortem researches of Morgagni, Greding, Meckel, Rochoux, Rostan, Lallemand, Bouillaud, Abercrombie, Foville, Bayle, Calmeil, etc., have made known the organic lesions of the brain indicated by disorder of sensation or motion, and though they have thrown no light on the mystery of thought, they have made better known the diseases of the brain and its membranes, and rendered their diagnosis more certain. He adds, “we should not be discouraged; new efforts, will, perhaps, reveal to us the cerebral lesions which produce insanity.”

For ourselves, we believe, with the late Dr. Armstrong, *that organic disease of the head will always be found, by careful examination, of those who die of insanity.*

Without entering minutely into this subject, we believe that pathology has established the following propositions:

1. Morbid changes in the cortical substance of the brain are directly connected with intellectual derangement.

2. Morbid changes in the white substance are directly connected with disorder of the motive powers.

3. That the integrity of one hemisphere of the brain is sufficient (though absolutely essential) for the manifestation of all the mental faculties.

4. That the integrity of the cerebellum is not absolutely essential to the manifestation of the intellectual powers.

We also believe that many other useful facts have been established respecting the functions of the brain and its various parts, by modern pathological researches; and that there is great encouragement to persevere in such inquiries, and great reason to expect from them still more important revelations.

Prognosis.—Imbecility, idiotcy is never cured.

Acute dementia is sometimes cured, chronic rarely, and that of old age never.

Insanity, after two years continuance, is cured with difficulty.

Insanity, produced by moral causes that acted suddenly, is often readily cured; but, if the moral cause acted slowly, the case is difficult.

Insanity produced or maintained by religious ideas, or by pride, is rarely cured; the same is true of insanity accompanied by hallucinations.

Those who regain their appetite, who sleep well, and become fleshy, without diminution of the delirium, are seldom cured.

Insanity that results from scurvy or epilepsy is incurable; its complication with those diseases, and with paralysis, terminates in death.

Mania is more readily cured than monomania or melancholy.

Relapses are most to be feared in hereditary insanity.

The age most favourable for the cure of insanity is from 20 to 30. After 50, cures are rare.

The greatest number of cures take place in the spring and autumn.

Treatment of Insanity.—We have seen that physical, moral, and intellectual causes, by acting on the brain, produce insanity. The indications of cure are therefore to remove the physical disorder, to quiet the passions, and check the aberrations of the understanding. To Pinel is unquestionably due the credit of first employing judicious, systematic means of curing the insane. He broke their chains and caused them to be treated with humanity and kindness.

As the causes of insanity are often various and combined, so must there also be a variety and combination of remedial measures. There is no specific treatment of insanity.

The first question that presents itself relates to the isolation of the insane, their *separation* from friends and home. On the necessity of this, the physicians of all countries are agreed. The cases are rare that do not require separation from those with whom they have lived habitually. Willis observed that foreigners were more certainly cured in England than the natives; and Esquirol says those who come to Paris to be cured are more frequently restored than those who inhabit that city. Removed from their former acquaintances, they should be subjected to a regular life and exact discipline, and be treated by all with the utmost kindness and humanity. Their passions should be carefully managed, the fears of the timid should be allayed, and the disconsolate should be consoled. In conversation with them, it is always necessary to speak with truth and sincerity, and never employ other language than that of reason and benevolence.

Exercise of the body is one of the most essential remedial measures. Riding on horse-back, travelling to great distances amid new and interesting scenes, swimming, playing nine-pins, fencing, and gymnastic exercises are all serviceable. The cultivation of the earth for some is the very best employment. Pinel advised that a farm should be attached to each lunatic hospital, to be cultivated by the patients. Bourgoïn says that the poor insane at the hospital of Saragossa, Spain, cultivate the earth and are cured; while the rich, who will not labour, continue insane. Esquirol observes that the wealthy of either sex are not as much benefitted by labour as the poor. He has, however, derived the best effects from the manual labour of the females at the Salpêtrière; where they assemble in large rooms, and sew, knit, weave, &c.; while others have been benefitted by attending to household duties, and others by cultivating a garden.

The clothing of the insane should be warm, especially for the melancholics; and their apartments should be kept warm during the cold season.

It is a mistake to suppose they can bear severe or long continued cold without injury.

Their diet should vary according to the nature and period of their disease. At first it is often necessary to restrict them to a light and simple diet; but afterwards, and during convalescence, it should be more substantial and abundant, but not exciting. Many are tormented by thirst, therefore the patients should never be without drink. Avenbrugger, Hufeland, and others, recommend the drinking of large quantities of cold water as a remedy for insanity, and preventive of suicide. They cite several cases in proof of the efficacy of this remedy.

Constipation is quite common, and exasperates the delirium; it should therefore be obviated; and all the excretions and secretions should be promoted.

We need not particularise all the remedies alluded to by our author, but will endeavour to notice the most important; and first,

Of Bleeding.—Bleeding is indispensable in plethoric habits at the onset of the disease, especially if the blood is forcibly transmitted to the head, or some long continued hæmorrhage or other evacuation is suddenly suppressed. But this remedy has been often carried to a culpable excess. It is rarely necessary; and great evils have resulted from considering the excitation and energy manifested by the insane as indicating the propriety of abstracting blood. Esquirol says he has frequently seen the insanity increased after bleeding, and after an abundant flow of the menses. He has seen it cause the melancholic to become furious maniacs, and then rapidly pass into dementia. Dementia is often produced by too active treatment at the commencement of mania and monomania.

Baths.—The warm bath is the most frequently useful. Nervous and irritable patients are benefitted by remaining in it several hours. Young and robust patients that complain of heat, are benefitted by cold bathing. At the commencement of insanity, with redness and heat of the face, cold and even ice applied to the head, while the feet are placed in hot water, is often very serviceable.

Emetics.—These are sometimes useful in melancholy, where there is diminished sensibility and great torpor prevails. They are injurious when erythism of any part exists.

Purgatives are very useful remedies, especially those which excite the biliary secretion and tend to produce hæmorrhoidal discharge. If they suspend the action of the skin, they should be alternated with the warm bath. Hellebore, gamboge, aloes, calomel, and above all the tartrate of antimony and potassa, and the purgative mineral waters, are very valuable agents in the cure of insanity. M. Chrestien, a celebrated physician of Montpellier, has derived the most happy effects from colocynth as a purgative, administered by rubbing it on the abdomen.

Tonics and Antispasmodics, are often very serviceable. Camphor, musk, iron, quinine, and antimony have been recommended in great doses as specifics in insanity, by different practitioners. They are all useful in particular cases, and marvellous effects sometimes result from their timely and judicious administration; but they will prove injurious and dangerous if given to all insane patients. Nevertheless we believe a large proportion of the insane, especially after the first stage has passed, are benefitted by tonics, iron, quinine, &c.

Opium.—Many insane sleep but little, and pass days and nights with-

out any. To produce sleep narcotics have been administered, but Esquirol thinks they are more injurious than salutary, especially if there is plethora or congestion of the head. Bathing and exercise he believes are more efficacious in producing sleep.

We do not doubt but there are some such cases, that are injured by opium or other narcotics, but we believe they are not frequent. Some that do not sleep well, are apparently injured by full doses at first, but are much benefitted by a more cautious use of them, by small doses frequently repeated. In mania they are often serviceable even in large doses. Esquirol relates that a young man was cured by swallowing an ointment containing twenty-four grains of opium. Sutton and Perry have cured maniacs tormented by thirst and want of sleep, by the use of opium. M. Perry states that he has given sixty-four grains in a day. The preparations of conium, hyoscyamus, stramonium and other narcotics, are often serviceable, and have been, we apprehend, too much neglected as remedies in insanity.

Setons, Moxas, the actual cautery, &c., are useful where there has been a metastasis, and to awaken the sensibility of the skin in cases of torpor and stupidity. Some recommend enveloping the head with epispastic plasters, but our author says, this practice has not succeeded in his hands, but on the contrary augmented the erythism and irritability of the patient. He has seen good effects result from the actual cautery applied to the neck in cases of furious mania. Electricity he has tried to a great extent at the Salpêtrière, without any beneficial effect, except in one case, that of a girl insane three months from fright, which suppressed the menses. She was electerised for fifteen days, when the menses flowed and she was cured. Galvanism and magnetism he has had recourse to, without beneficial effects.

Rotary machines have been tried, and are now every where abandoned as generally useless and often dangerous.

Music, Dancing, Theatres, Religious Worship.—The efficacy of music as a remedy in insanity, has been much vaunted by the ancients. Esquirol has tried, to a great extent, various kinds, and under circumstances the most favourable, and he says that it irritated some into fury, distracted others, but did not contribute to the cure of any. He thinks it serviceable to convalescents. Formerly they had balls and theatrical representations at Charenton. For a while the most beneficial results were predicted and proclaimed. The public became much interested, and for several years all Paris resorted there to witness the conduct of the insane who took part in these proceedings. At length it was discovered that no good and much evil had resulted, and in 1811 all theatrical representations and all balls were interdicted at the Charenton, by a decision of the Minister of the Interior, on the request of the most celebrated physicians.

All the lunatic establishments of Europe, whether Catholic or Protestant, have ecclesiastics or ministers of religion attached to them, whose counsel and instruction often aid in the cure of some insane. Religious impressions give to the thoughts and affections an energy which is sometimes very useful.

The prevention of mental derangement deserves great attention. Marriages with those whose parents have been insane should be avoided. Much may be done to induce or to prevent insanity by education. The education of a human being commences in the cradle, and in infancy

whatever is likely to powerfully excite the brain, to kindle the imagination, such as the relation of frightful stories, should be forbidden.

In cultivating the intellect of a child, the heart, the affections should not be neglected. The passions should be watched and guided, and improper desires and caprices restrained.

Those born of parents that have been insane, should have great attention given to their physical education, while excitement of the mind by close application to study should be avoided.

Having examined at considerable length the first chapter on insanity in general, we shall but briefly notice the remaining chapters.

Hallucinations.—One who is thoroughly convinced that he actually perceives a sensation, when there is no object to excite it within the range of the senses, is in a state of hallucination. This affection arises from the undue action of the brain itself; it has its seat in this organ, and not in the nerves or in the extremities of the nerves. The books of ascetics, the history of magic and sorcery, the lives of some renowned men, furnish numerous instances of hallucination. Some have visions perpetually, and see persons not present; others perceive odours; some, while reposing on the softest beds, complain of asperities and points of instruments that they believe wound them. Others complain of imaginary blows that they appear to suffer from, while others believe that they hold in their hands things not present. A general officer thought he held in his arms a robber and shook him with violence.

Hallucination occurs in every variety of insanity, and even in those not deranged, and require no special treatment. Autopsical examinations have not thrown any light upon this affection.

Illusions, errors of sense.—These arise from derangement of the nerves or nervous extremities, and the reaction of the brain on impressions actually received. In hallucination the centre of sensibility alone is affected; in illusions, the nerves are first disordered. They are not rare in health, but reason dispels them.

They often arise from internal sensations; thus, hypochondriacs think their lives endangered because they are deceived as to the intensity of their sufferings. In some the sensibility of the skin is disordered—they do not feel the coldness of ice, and handle it with pleasure—while others complain bitterly of the slightest touch of the skin.

An officer who had bad teeth, attributed all his sufferings to this source. He accused the sun of being the original cause, and threatened to exterminate it with his brave division. A woman who had a cancer of the stomach believed she had an animal in that organ. Often patients attribute the bad feelings they have in the stomach and bowels to soldiers fighting or to councils debating there.

A patient who complained of frogs in his stomach was cured by Ambrose Paré, by secretly introducing those animals into the close stool at the time of the operation of purgative medicines.

Illusions of the external senses, especially of the sight, are very common. Some believe the clouds to be armies contending; some collect small stones, pieces of glass, &c., and consider them the most precious diamonds. Illusions of sight are often instantly dispelled by bandaging the eyes. Illusions of smell frequently occur, and patients refuse food on this account; sometimes agreeable odours have the effect to calm the most agitated and unquiet patients.

In some patients long tormented by illusions of sight, the optic nerves have been found diseased.

Of Fury.—Fury expresses the highest exaltation of the most vehement passions. It is an accidental occurrence in insanity, the wrath of delirium. It occurs not only in insanity, but in drunkenness, meningitis, hydrophobia, and hysteria. It was formerly more frequent when the insane were badly treated, whipped, chained, &c.

The furious do not require any special treatment; many practitioners have been led into the error of bleeding them to lessen their excitement. This practice does not calm them, but, on the contrary, serves to lessen their energies and prevent the reaction necessary for their recovery.

This symptom, so alarming to those not familiar with the insane, instead of being an unfavourable one, is often the reverse, and of itself affords hope of cure. Those who, from too debilitating treatment, have been thrown into dementia, sometimes, on recovering their strength, become furious and soon recover.

Puerperal Insanity.—This chapter is less satisfactory than many others in the work; it is less complete as to useful practical facts than the writings of Gooch and others on the same subject. Though many females are admitted at the Salpêtrière affected with this form of madness, (about one-twelfth of all received,) yet probably many of them are not recent cases, and hence one reason that the cures are not more numerous. Of *ninety-two* recorded there, fifty-five recovered, six died, and thirty-one remained incurable. The recoveries as to time were as follows; four in the first month, seven in the second, six in the third, seven in the fourth, five in the fifth, nine in the sixth, fifteen in the following months, and *two* after two years.

The predisposing causes of puerperal madness are hereditary tendency to insanity, previous attacks of insanity, and extreme sensibility. The exciting causes are exposures to cold in various ways; the abuse of medicines, which cause the suppression of the lochial discharge, and the excitement of the feelings and moral affections by anger, chagrin, fright, &c.

Treatment.—Seclusion is necessary, but it is not so requisite to send patients to lunatic asylums, with this form of insanity, as with others. Evacuants should be used cautiously; bleeding is very rarely proper. Cold to the head and warmth to the feet, and the warm bath, are frequently serviceable. Purgatives are usually required; after which, opiates in full doses are necessary, and, in protracted cases, tonics.

Epilepsy.—Our author collected the history of 385 epileptic females admitted to the Salpêtrière; 45 of whom were hysterical, 12 were monomaniacs, 30 were maniacs, one of whom had a tendency to suicide, 34 were at times furious, 145 in the state of dementia, eight idiots, 50 manifested no other mental disorder than feebleness of memory and tendency to dementia, 60 others were not insane, but very irascible, capricious, eccentric, &c.

Epilepsy attacks all ages; sometimes it is apparently epidemic or contagious. Children and females are more subject to it than men. Those of the melancholic temperament of cachetic and scrofulous constitution—those enfeebled by scurvy, rickets, syphilis, are more frequently disposed to it than others. Bad regimen, masturbation, blows on the head, alcoholic drinks, violent moral commotions, anger, fear, &c., are the most common

causes of epilepsy. Several cases have been noticed which were caused by small tumours involving nerves, the removal of which tumours cured the epilepsy.

It is an hereditary disease, and, contrary to insanity, is more frequently transmitted by the father than the mother. Pathological anatomy has thrown but little light on this disease. The pituitary gland has been quite frequently found affected; and tumours of various kinds have been found in the brain, and other marks of disease about this organ, its membranes or osseous envelopment.

Epilepsy is called idiopathic when its seat is in the brain or its envelopments, and sympathetic, when its seat is in the digestive apparatus or other parts of the body than the head. It is sometimes feigned; a girl, on hearing that marriage was recommended for the cure of epilepsy, feigned this disease. It is usually a chronic disease, rarely fatal at first. When congenital and hereditary, it is never cured, and those attacked soon after birth rarely recover. If they do not recover at puberty, they remain incurable. Those who become epileptic after the age of 30, are generally cured if properly treated. Epilepsy complicated with insanity is never cured.

Treatment.—This should vary with the cause of the disease and the organ primarily affected, and it is necessary not only to attack and remove the cause, but to destroy the disposition to return. No one, we believe, has made more numerous, more thorough and well directed attempts to cure this disease than Esquirol. He has tried for a long time, and in many cases the various remedies hitherto recommended for this disease, not even omitting the secret remedies; and his avowal of the results is deplorable enough. He states that he has not cured any; he has suspended the attacks of some for a time, and has cured hysterical affections, by many considered epileptic. Every new remedy prescribed, suspended the disease for *one, two*, and sometimes for many months. For our encouragement it should, however, be recollected that all the patients treated by our author, had passed the age of puberty, and most of them were more or less mentally deranged.

Critical terminations of Insanity.—Esquirol has constantly noticed that the cure of insanity is incomplete or transient, if not accompanied by some critical phenomena. During the first month after an attack of insanity there is usually a marked remission, or incomplete crisis, owing to the cessation of the symptoms complicated with the insanity; after which, if the disease continues, it becomes more intense. This remission amounts often to a complete crisis, and there are more cures during the first month, than in any subsequent month. An attack of fever sometimes cures insanity, and the same effect is produced by the recurrence of repelled eruptions, the return of the menses, &c. If there is an hereditary tendency to this disease, the restoration of the menses often has no effect, and there is then reason to fear the case will prove incurable. Spontaneous suppuration, chilblains, boils, profuse perspiration, spontaneous vomiting, sometimes are critical, and terminate the disease. Coition, onanism, have cured insanity, though they more frequently cause it. A young maniac quit his cell and entered that of a young female lunatic. They abandoned themselves through the night to venereal pleasures. In the morning the young man was found dead, and the young woman cured. Insanity occurring

during pregnancy, is generally cured by accouchement. Falls on the head, poisons taken into the stomach, surgical operations, as for cataract, and castration, have cured this disease.

Lypémania or melancholy.—This variety of insanity is often hereditary, and often produced by moral causes. In these respects it differs from hypochondria. The countenance of the melancholic expresses their state of sorrow, often of terror. Their eyes are cast down, fixed, or directed afar, and their looks are suspicious, fearful, or those of deep thought. They are inactive, and move with slowness and apprehension. They often refuse all nourishment, though they are always better when they can be prevailed upon to eat regularly. They sleep but little, and not quietly, tormented by fear, jealousy, or hallucinations. Their secretions are much disordered, some retain their urine for many days. One would not urinate for fear of drowning the world; he was prevailed upon to do so, by assuring him the world was on fire. The delirium usually takes the character of the moral affection that produced it. A woman became insane from fright caused by robbers entering the house; she ever after cried robbers, and deemed all to be such who approached her.

Certain climates, a humid atmosphere, or a very hot and dry one, and the sirocco winds of Italy are said to cause this disease. It seldom affects persons until after puberty, and rarely after the age of fifty-five. Women are more disposed to it than men. Fasting, too low diet, the abuse of opium, alcohol and hot drinks, onanism, suppression of accustomed evacuations, and constipation, are physical causes of this variety of insanity.

It is often intermittent, sometimes passes into mania, and often terminates in phthisis, or slow marasmus. Autopsical examinations have not shown the particular cause of this variety of mental disease, though it is singular that displacement of the colon has been observed in one-fifth of the cases examined.

To treat melancholy properly, it is important to know the cause. Among the remedies the most useful are exercise, travelling, visiting new scenes, manual labour, &c.

Sudden and powerful emotions, adapted to the circumstances of each case, have sometimes cured. Alexander de Tralles cured a woman who thought she had swallowed a serpent, by putting one into the vessel into which she vomited. Zacutus restored a young man who thought himself damned, by introducing a person disguised as an angel, who announced the forgiveness of his sins.

Forestus, one who would not eat because he was dead, by placing near him a pretended dead person, who assured him that people in the other world eat abundantly. A patient who believed he had no head, was convinced he had, by being obliged to wear a heavy lead bonnet.

Demonomania.—We do not know of a more eloquent and interesting essay on any medical subject than this of Esquirol on Demonomania. By this term he means a variety of religious melancholy, which he shows has prevailed in all ages. It includes all the insane who believe themselves God, those who pretend to frequent communications with the Almighty, and those claiming to be inspired; as well as those who believe themselves damned, and who are in the power of the devil and of evil spirits. Though most demonomaniacs are depressed and fearful, yet some of them are cheerful, bold and proud. Of all the insane these are the most atrocious,

and frequently not only attempt their own lives, but that of their friends, their parents and children. Pinel relates an instance of one, who on hearing a sermon, believed himself damned, and immediately killed his children to prevent their being damned also. Esquirol says, this variety of insanity is less frequent in France at present than formerly; that religious ideas have now less influence on the conduct of men; but that instead of the insane who fear the power of demons, are those who fear the police, the power of government, and the prison. Demonomania more frequently affects women than men, the feeble minded and credulous, and those rather advanced in life. The treatment is the same as that of melancholy. The assistance of the ministers of religion should not be neglected, it has sometimes been, though not generally, serviceable. The consolations of religion, the presence and encouragement of the minister of the Gospel may awaken hope and lead the way to recovery.

In this chapter our author alludes to those most unaccountable varieties of insanity in which patients believe themselves to be made of glass and easily broken, or of butter and will melt in the sun or near the fire, or changed into beasts, or that parts of their bodies have been removed, or grown to an enormous size, or their sex changed. At Charenton is a female who believes she has lost her own body, and is perpetually searching and inquiring for it.

Suicide.—Manners, religious opinions and laws have rendered self destruction more or less frequent in different ages. Sometimes men devote themselves to death from the most elevated sentiments, and the religion of some pagan nations, leads some to die in honour of their divinities. Christianity, wherever it has penetrated, has destroyed this practice.

Suicide is, however, generally a symptom of mental alienation. Sometimes violent insanity leads to it, but more frequently melancholy, hypochondria, physical suffering, the loss of honour, and of fortune. Instances have occurred of two individuals devoting themselves to death at the same time for the same grievance. Esquirol never knew a case of suicide solely from *tedium vitæ*; in all instances there has been some real or imaginary trouble. In seasons of calamity, wars, famine, &c., suicides are increased. Not unfrequently individuals say they will destroy themselves, but will not if urged to it.

A female patient, who had often threatened to destroy herself, one day assured Esquirol that she was about to do it. "Very well," he answered, "it is nothing to me, and your husband will be delivered of a great torment;" she instantly ceased the preparations she was making to accomplish the act, and never spoke of killing herself again.

Some lunatics in attempting to destroy themselves, endure the most severe suffering without complaining. M. Lovat, a shoemaker of Venice, believed that God had ordered him to die on the cross. He was two years in making preparations, preparing the cross, &c. Finally he fastened his feet to the cross by nails five inches in length, then his hands by striking the heads of the nails against the wall of his chamber. Before fastening his left hand, he made a large wound in the left side of his breast. Then by the aid of cords previously prepared, and by slight movements of the body, he moved the cross to which he was nailed out of the window and suspended himself on the cross in front of the house, where he was found the next day, and conveyed to the hospital. He made no complaint of pain, and was finally cured of his wounds, but not of his delirium.

Suicides are thought to be more frequent in certain climates than in others. They are most numerous in very hot, dry weather, and in wet autumns, following very dry summers. The reading of works approving of suicide, and the accounts of suicide probably increases the number. Some are very deliberate. M. informed his friend that he should kill himself that day. His friend requested him to wait until a certain hour the following day when he would again see him. He waited until the appointed time, but when his friend, who had been detained, arrived an hour after the appointment, he was dead. The English have been considered more disposed to suicide than the people of any other country. This does not appear to be true. The following table is made up from the works of Balbi, Casper, Quetelet, Palmer, and other good authorities.

France,	one suicide for	20,740	inhabitants, annually.
Prussia,	do.	14,404	do.
Austria,	do.	49,182	do.
Berlin,	do.	2,600	do.
London,	do.	8,000	do.
Paris,	do.	3,900	do.
New York,	do.	7,797	do.
Boston,	do.	12,500	do.
Baltimore,	do.	13,656	do.
Philadelphia,	do.	15,875	do.

But these tables must not be relied upon as complete evidence of the number of suicides in each place, for in some towns, as Paris, all found dead by the police are included in the number of suicides, while at London, and New York, only those known to have killed themselves are thus included. Besides, in some years there are far more suicides than in others, and they are much more frequent in cities than in the country, in proportion to the population.

Monomania.—Every insane hospital has gods, princes, emperors, queens, priests, and those who believe themselves inspired. We have, says Esquirol, at the Salpêtrière, those who believe they direct the sun, moon and stars, and often threaten us with destruction by flood; others who believe themselves very learned, and to have made great discoveries; some are orators, poets, &c., and are enraged if their discourses are not listened to. Some deem themselves immensely rich, and dispense fortunes to those around, while others are ever in love, and pass their time among sylphs and houris.

Our author treats of monomania under the following heads :

1. *Monomanie erotique*—love-melancholy.
2. *Monomanie raisonnée ou sans délire*—reasoning insanity.
3. *Monomanie d'ivresse*—insane desire for liquor.
4. *Monomanie incendiaire*—insane desire to burn.
5. *Monomanie homicide*—insane desire to kill.

Monomanie erotique, or love-melancholy, is a mental affection in which amorous ideas are fixed and predominant. It is characterised by excessive love, either for a known object, an imaginary or inanimate one. Alkidias of Rhodes was attacked with love melancholy for the statue of cupid, of Praxiteles. The statue of Justice, (represented as a beautiful girl,) by M. Angelo, in St. Peter's, at Rome, has been clothed with a bronze garment in consequence of a Spaniard, Pygmalion-like, having fallen in love

with it. In this affection the pulse is usually increased, and the face reddens whenever the object loved is seen or mentioned. Thus Hippocrates discovered the love of Perdicas, Erasistratus that of Antiochus, and Galen that of Justine, &c. Its invasion is sometimes sudden and its course rapid. A young girl of Lyons was promised in marriage to a young man of the same place. Circumstances occurred which prevented the marriage, and by command of the parents her lover was sent away. Immediately on learning his removal she became melancholy, refused all nourishment, would not speak, and refused all consolation. After five days spent in vain efforts to overcome her sorrow, the young man was recalled;—it was too late—she died in his arms.

A girl for several years expected to marry a person who finally deserted her and married another. She immediately became deranged, and was received into the Salpêtrière, where she has remained for years, ever talking of her former lover, and disdains all other men, and rejects their attentions. “When one loves well,” says Esquirol, “it is forever.” This form of insanity does not require any peculiar treatment, excepting that marriage is often an efficacious remedy.

Monomanie raisonnante.—Those affected with this form of insanity, are reasoning lunatics; their conversation is proper and coherent; they reason correctly, though their actions are wholly contrary to their interests and to the usages of society; their feelings, habits and affections are changed, while the intellect is but little involved. It is the *moral insanity* of Dr. Prichard, whose work on insanity, Esquirol observes, “is the most complete that there is on mental maladies.”

Under the influence of this form of insanity, persons commit heinous offences, and suffer punishment for them, because it is difficult for many to conceive of a person’s being insane, who converses properly and reasons correctly; but that there is such a form of insanity is made abundantly evident by cases furnished by Esquirol, Prichard, Dr. Woodward and others.

Monomanie d’ivresse.—The principal characteristic of this form of insanity, is an insatiable desire for intoxicating drinks. It is true that the use of such drinks is a very frequent cause of insanity, but it is also true that this desire is a symptom, often the first, of insanity. It occurs among women about the period of the cessation of the menses. Isolation, until habits of sobriety shall overcome those of intemperance, appears to Esquirol to be the most useful method of treatment. We have long thought that asylums for drunkards would be very valuable institutions, and hope that such will be established in this country.

Monomanie incendiaire.—We cannot doubt, after reading the cases furnished by our author, that there is a maniacal impulse to set on fire buildings, furniture, &c. This impulse is often sudden, irresistible, and not the result of passion, delirium, or loss of reason. Some say they know no joy like that of witnessing a large fire. One young man, it is stated by M. Esquirol, from the moment the bells announced a fire, became violently agitated, body and mind, and could not resist the desire to see it. He, finally, in the course of six months, set on fire five or six buildings, and always carried matches with him, yet he was never known to rob during any fire.

Monomanie homicide.—Not unfrequently insane persons, are misled by

illusions of sense, such as hearing a voice urging them to the act to destroy others; but numerous observations have convinced Esquirol that some monomaniacs kill from an instinctive impulse. They commit the act without passion, delirium, or motive, from an impulse that comes upon them instantaneously, irresistibly, and wholly independent of volition. Sometimes quite young children exhibit this tendency, of which striking examples are furnished in the work we are noticing. This form of monomania deserves much study; it has been largely investigated by German and French writers, and the reader will also find cases illustrative of it in the writings of Prichard, Beck, Woodward, &c.

Mania.—In mania there is first intellectual disturbance, and this occasions disorder of the passions. The symptoms are quite too numerous and variable to be particularised here. They have been best described by Pinel. There is a general *bouleversement* of the understanding, a chaos of the mental faculties and want of harmonious action. Though it frequently approaches slowly, yet more frequently than any other form of insanity it invades suddenly. Sometimes a great mental shock produces it immediately. Though this variety of mental disease is most deplorable as respects the violence of the symptoms, yet is the variety most frequently cured.

It is remittent or intermittent, and during the remissions some exhibit great intellectual power. General ——— had the entire confidence of Napoleon, who directed him to superintend some immense military preparations at Boulogne, when he became much fatigued by his duties which exposed him most of the day to a hot sun. Suddenly he quitted the army, mounted a carriage accompanied by one aid, and set off for Paris, announcing on his route that he was the bearer of a treaty of peace with England. He travelled with great rapidity, not allowing himself time to eat, and paid postillions largely to hasten their speed. Arriving at Paris, the public funds rose from the news of the treaty. Not finding Napoleon at the Tuileries, he hastened to St. Cloud, and, in disordered dress, penetrated to the apartments of the Emperor, and announced to him what he alone, of all whom the general had met, knew to be incorrect. Napoleon immediately committed him to the care of Corvisart and Pinel, who, for awhile, treated him at his own house, but finally confided him to the care of Esquirol. He was furiously deranged for a few weeks, when he became more docile, though his delirium continued through the summer, during which time he wrote comedies and plays, and conceived or invented an improvement in fire-arms, and entreated Esquirol to permit him to visit a founder to have a model made from designs he had traced. After long hesitation he was permitted, on giving his word of honor not to go elsewhere, and to return in a short time, to visit a founder accompanied by a servant. Immediately on his return he became for awhile violently deranged, but eight days after he again visited the founder, found the model completed, and gave orders for *fifty thousand* to be made. This order was the only symptom of insanity which he manifested during his visits. In the autumn he became better, and for awhile seemed to have recovered his reason, but not long after was again attacked, and soon paralysis of the tongue and loss of memory ensued, and, notwithstanding the use of moxas and other remedies, the paralysis increased, and he died in convulsions. On opening the head an encysted tumor was found at the inferior and

posterior portion of the right hemisphere of the brain. The invention referred to was found to be a great improvement, and was afterwards adopted.

Dementia.—In this form of insanity there is enfeeblement of sensibility, intelligence, and volition and the passions are null or nearly so. The conversation of the demented is incoherent, consisting often of a repetition of words or phrases, without attaching any meaning to them. Dementia does not frequently occur until after forty years of age, and is often the consequence of other diseases, or of other forms of insanity. Too active treatment of mania and monomania often cause it. It co-exists with melancholy, mania, epilepsy, convulsions, scurvy, and, above all, with palsy.

Autopsy exhibits much and varied disease of the brain and its meninges, especially atrophy or compression of the convolutions of the brain, and particularly of those in the frontal region.

Idiotism.—This not a disease. It commences with life or previous to the age of the full development of the mental faculties, and arises from imperfect organisation. The intellectual faculties of idiots have never been developed sufficiently to enable them to acquire knowledge as others of the same age. The state of idiots cannot be changed. They seldom live to an advanced age, rarely over thirty years. On examination after death, vices of conformation of the cranium are usually found. It is remarkable that some of the most stupid idiots are musicians, and are passionately fond of hearing music. *Cretins* have been classed among idiots; they are a remarkable variety of idiots, who inhabit for the most part the gorges of mountains. They are numerous in the Alps and the Pyrenees, but their numbers have greatly diminished within the last half century, owing to the draining and drying up of the marshes, to better regimen and better habits of the inhabitants, the use of coffee and the precaution of rearing their children on the mountains.

Establishments for the Insane in France.—This chapter and the two following, the one on the *Hospitals for the Insane*, the other containing the *History and Statistics of the Royal House of Charenton*, abound with much useful information, and many valuable observations on the structure and management of lunatic hospitals, but to the members of the medical profession in this country they are less important, as there are now institutions in this country embodying all the excellences of arrangement, &c., found in those of France, and which we believe are as well managed in every respect. These chapters we shall, therefore, not notice here; indeed some of the most important facts contained in them, have already been given in our notice of other chapters.

In no other country has the care for the insane been greater, especially within a few years, than in the United States; and no other country now contains so many lunatic hospitals in proportion to the population. Most of these have, however, been established within the last twenty years. They are most numerous in the northern states, where insanity is more prevalent than in the states at the south. There is one at Augusta, in the state of Maine, and one soon to be completed in the state of New Hampshire. At Brattleborough, in the state of Vermont, is a lunatic hospital, and there are two in Massachusetts, one at Worcester and another at Charlestown. There is now one in Connecticut at Hartford, and, during the present year,

a committee of the legislature of that state have recommended the erection of another for paupers, at the expense of the state.

There are several in the state of New York. One at Bloomingdale near the city of New York, and another is building for the accommodation of a large number of poor insane now provided for at the city alms house. There is also a lunatic asylum at Hudson, and a magnificent hospital for lunatics, calculated to accommodate one thousand patients, is now building, at the expense of the state, near Utica. In the state of Pennsylvania are two hospitals for the insane, one connected with the Pennsylvania Hospital in the city of Philadelphia, and one at Frankford, a few miles from Philadelphia.

There is one in Ohio, at Columbus, and one in the state of Maryland, connected with the General Hospital, at Baltimore. There are two in the state of Virginia, one at Williamsburg, and one at Staunton. At Lexington, Kentucky, is an Asylum for Lunatics, and there is one at Columbia, in South Carolina, and we understand there is one in North Carolina, and one at Nashville, Tennessee, and lunatics are received into the Charity Hospital, at New Orleans.

From the fact that public attention is now awakened to the importance of having asylums for the insane, we doubt not that every state in the Union will within a short time be provided with one or more, for the accommodation and cure of those afflicted with insanity.

Notice of the Village of Gheel.—This is a very interesting account of a village of Lunatics, or a village made up of detached cottages, occupied by peasants of good character, who devote themselves to the cure of lunatics, whom they treat with great kindness. They employ their patients in the cultivation of the land and in out door employments. The recoveries here are numerous and rapid. It usually contains from four to six hundred insane.

Are there more insane persons at the present time than forty years since? The answer to this question given by Esquirol, in 1824, is not direct, as he mostly confines himself to showing that much of the apparent increase is not real—that since the insane have had good hospitals provided for them, and public attention directed to their welfare, many more cases of this disease have become known to the public. This undoubtedly accounts for some of the apparent increase, but not for all. Hence we find most authorities who have recently investigated this subject, admit that the increase of insanity within the last half century has been very great.

M. Belhomme, in an article published in the bulletin of the Medico-practical Society, says, "it cannot be doubted that there has been a positive increase of the insane during the last half century." This he attributes to the great political events and other commotions of this period. After any violent excitement of the public mind there has been an increase of admissions into the great lunatic establishments.

M. Briere de Boismont, at a recent meeting of the Royal Academy of Paris, communicated the results of his inquiries respecting the number of insane persons in the large towns of Europe. From these it appears that insanity increases in frequency, with the advance of civilization and refinement.

The following table is made up from those of Esquirol, M. Briere de Boismont and other good authorities.

	<i>Population.</i>	<i>No. of Insane.</i>	<i>Proportion.</i>
England,	12,700,000	16,222	793
Scotland,	2,093,500	3,652	563
France,	32,000,000	32,000	1,000
Norway,	1,051,300	1,909	551
Belgium,	3,816,000	3,763	1,014
Holland,	2,302,000	2,300	1,046
Italy,	16,789,000	1,441	4,879
Spain,	4,085,000	569	7,181
United States,	12,866,020	16,000	800
Westphalia,			846
Saxony,			968
London,	1,400,000	7,000	200
Paris,	890,000	4,000	222
Petersburg,	377,000	120	3,133
Naples,	370,000	479	759
Cairo,	330,000	14	30,714
Madrid,	204,000	60	3,350
Rome,	154,000	320	481
Milan,	151,000	618	242
Turin,	114,000	331	344
Florence,	80,000	236	338
Dresden,	70,000	150	466

A. B.

BIBLIOGRAPHICAL NOTICES.

ART. XIV. *A Report founded on the cases of Typhoid Fever, or the Common Continued Fever of New England, which occurred in the Massachusetts General Hospital, from the opening of that institution, in September, 1821, to the end of 1835.* Communicated to the Massachusetts Medical Society, in June, 1838, by JAMES JACKSON, M.D., late attending Physician in that Hospital. Boston, 1838. Whipple & Damvell. 8vo. pp.

THE above essay, modestly entitled a "Report on Typhoid Fever," is based upon upwards of 300 cases of the disease received into the Massachusetts General Hospital, during a period of about fifteen years, terminating in 1835. About half of the above cases were under the care of Dr. Jackson himself, whose reputation as an enlightened physician and faithful observer is well known to all our readers. He adheres to the distinction between essential or idiopathic, and secondary or symptomatic fevers; and understands by typhoid fever the disease described by M. Louis under that name, and characterised by a peculiar alteration of the glands of Peyer. This, he says, is the common continued fever of New England; and "*in every case, where an examination has been made, the morbid changes have been found to be the same as described by M. Louis.*" In the face of such an unequivocal assertion, coming from such a source, it seems to us impossible that any one should hesitate to admit that the disease described by the French writers is identical with that which is found in our own country. It should be clearly understood, however, that Dr. Jackson does not mean to confound with this our bilious remitting fever. The two diseases, in fact, are distinguished from each other by such bold and striking features, both as regards the condition under which they occur, their symptoms, course, and, to a certain extent, their treatment, that it would be difficult, in an immense majority of cases, to confound them.

Previous to entering upon an analysis of his cases, Dr. Jackson devotes a few pages to a history of his views on the treatment of fever, and of the changes which they underwent at different periods. The practice which he adopted at the commencement of his professional career, and which was at that time generally in vogue, consisted in the early employment of emetics and cathartics, of which calomel almost always made a part, followed by the use of the latter remedy in small doses, frequently repeated, and combined with antimonials or ipecacuanha, or alternated with them. Vesication was also resorted to, as well as other remedies of minor efficacy. Blood-letting was only employed "when symptoms regarded as highly inflammatory were present, or when vomiting and purging had failed to give relief to the urgent symptoms of the early period." His subsequent experience confirmed his favourable opinion of early evacuation, but his faith in the efficacy of calomel was shaken. In 1814 he tried the bolder use of antimony, as recommended by Odier, and thought it preferable to the mercurial practice. The tartarised antimony was given first in the dose of an eighth of a grain, each succeeding dose being increased by an eighth of a grain, until many persons were brought to take from half a grain to a grain at a dose, and some two, three, or even four grains. Subsequently, however, he was led to doubt whether he had not attributed too much value to this medicine, and gradually used it less and less. Since the year 1830 mercurials were almost entirely given up both by himself and his colleagues. Finally, he says,

"in the year 1833, we began to doubt the benefit of active treatment, or, at least, of any continued active treatment; though few patients were allowed to go without a cathartic." During the years 1833, 1834, and 1835, he usually employed antimonials according to the method of Odier, in cases admitted in the first week of the disease, and occasionally in those admitted later. Early evacuations were continued, but cathartics were not so often employed after the first days as previously. Of the 303 cases analysed, 42 proved fatal, or one in 7.214. In order to make a more accurate estimate of the mortality, however, Dr. Jackson thinks that there should be added to the list 40 cases, which were undoubtedly typhoid fever, but whose histories were too imperfect to become the subject of critical inquiry, and have therefore been excluded from the general calculation. With the addition of these 40, of which only one died, the proportion of fatal cases would be one in eight nearly. This mortality is about the same with that found in the French hospitals of late years, according to the reports of several of their most celebrated physicians. The mortality was found to be different in the two sexes, that of the males being 1 in 7.392, and that of the females being 1 in 6.785.

The great influence of age upon the severity of the disease is clearly made out; for among the fatal cases the average age was two and one-third years greater than among those not fatal. A still stronger proof, however, is found in the fact that of those who were upwards of thirty years of age one in four and one-fourth died, whilst of those who were twenty, or under, one in 10.87 died.

Of all the circumstances, however, which influenced the degree of mortality, the period of the disease at which the patient entered the hospital, would seem to be the most important. Thus, of those admitted in the first week of the disease, one in 12.85 died, of those admitted in the second, one in 8.68 died, and of those admitted in the third and fourth weeks, or later, about one in 4.5 died. The same circumstance has a great influence upon the period of convalescence. The evident advantage of early admissions are not so much attributed by Dr. Jackson to the medical treatment of the patients, as to the many comforts and immunities which they enjoy in a hospital, and which they cannot usually command at their own places of residence. This result is exceedingly interesting, for it hence clearly appears that an airy apartment, cleanliness, proper attendance, a well regulated diet, &c., are more important than the active medical treatment. Among those who recovered, the average duration of the disease was 22 days, the period of convalescence being dated from the time when the patient began to take solid food, as bread or rice; the febrile symptoms having abated for two or three days previous. The period of convalescence, like the mortality, was influenced very much by age; the average duration of the disease in those who were above 21 years of age, being two days more than those who were younger. The duration of the disease was very different in different years, the extremes being 18 in one year and nearly 26 in another. Here, also the period of admission exerted a powerful influence; the average duration for those admitted in the first week of the disease being 17; in the second week, 21; in the third week, 25; and in the fourth week, or later, 43—omitting the fractions. In a few instances, the fourth or fifth days are marked as the days of convalescence.

The symptoms are next examined; and first, the condition of *the tongue*. Of 264 cases in which the condition of the tongue was noted, it was found dry in 132; denuded in 48; and dark in 42. Of the 132 cases 28 were fatal, or one in 4.71. Of the 48 cases six were fatal, or one in eight. Of the 42 cases 13 were fatal, or one in 3.23. Hence our author concludes that a dry tongue was an unfavourable sign, and a dark one still more so; but that a denuded tongue was not unfavourable. By a reference, however, to the number of fatal cases here mentioned, it will be seen that they amount in all to 47, which is five more than the whole number of deaths reported; so that there has been evidently here some mistake in calculation. From an examination of the documents contained in the report we should presume that among the 132 cases where the tongue was dry, there were 18 instead of 28 fatal cases as stated; in which case the proportion, instead of one in 4.71, would be one in 7.33, or a fraction less than the average

mortality. If this be correct, a merely dry tongue, instead of being an unfavourable sign, must be regarded as of little or no value in forming our prognosis. Diarrhœa occurred in more than half the cases, or one in 1.77. Of these cases, a much larger proportion died than of those in which this symptom was not present, whence Dr. Jackson concludes that it is an unfavourable symptom.

Hæmorrhage from the bowels occurred in about one in ten cases, and of these about one in three proved fatal. It was present in about a fourth part of all the fatal cases, and in only a thirteenth part of the favourable ones, whence it is evident that this is a very unfavourable symptom, much more so than diarrhœa. In a few cases the hæmorrhage was followed by well marked and permanent relief, but generally there was great weakness and sense of exhaustion in consequence of it.

The frequency of the pulse varied very much in the different cases. In two it was as low as 40, whilst in one it was as high as 168. The average of the least frequent pulses was 77, and of the most frequent 106. This average was very different in the different years, in some being much greater, and in others much less. Thus, for example, in 1826 the average of the most frequent pulses was 100, while in 1824 it was 122. In the fatal cases, the average of the lowest pulses was nearly 92; of the highest, 129; being much greater in females than in males. In the favourable cases, on the contrary, the average of the lowest pulse was 74; and that of the highest upwards of 102. Frequency of the pulse, then, is of much value in forming a prognosis; and, when great, must be regarded as a very unfavourable symptom. If we consider this fact in connection with the one above mentioned, that the frequency of the pulse varied very much in different years, we must be convinced of the utter fallacy of any conclusions as regards the relative value of two different plans of treatment, derived from a mere numerical comparison of results in two series of cases treated in different years.

Epistaxis occurred in about one out of four cases, and is not to be regarded, says Dr. Jackson, as a very unfavourable symptom, unless, perhaps, when very copious.

Retention of urine was observed in only six cases, and three of these proved fatal. Headache was noted in the early period of almost every case, and in many was very severe. Dizziness, tinnitus aurium, and watchfulness were frequently noted; and the latter symptom appears to be decidedly unfavourable. Somnolence occurred at a late stage in many cases; and, like watchfulness, is to be ranked among the unfavourable symptoms, even where it is slight. Delirium was noted in about one-third of the cases, and of these rather less than a third proved fatal, so that this symptom is of bad omen, even worse than the two preceding. Subsultus tendinum, though much less frequent, was found to be of equally bad omen.

Rigidity of limbs was present in six cases, five of which proved fatal. Besides a temporary palsy in one case, and numbness lasting for several days in two, there was a painful state of one or both legs, for many days, in the latter stage of the disease, in eight cases. This latter affection is to be classed among the sequelæ of the fever, as it occurred after convalescence. Dr. Jackson says that he does not recollect to have seen it described by any one, and thinks that entire recovery from it always takes place.

Rose coloured spots were not noticed previous to 1833. In that and the two following years they were noted in 70 cases; 106 cases having occurred during that period. Two out of three then had rose coloured spots. Among those who had them, the proportion of deaths was one in 7.77; whilst the average mortality during the three years in question was one in 5.88. Hence, it is probable that this eruption may be regarded as a favourable sign. Some doubt however may exist upon this point, as Dr. Jackson is not at all satisfied that the rose coloured spots did not escape notice in some cases.

The *sudamina* were only noticed during 1833, 1834, and 1835, and not, perhaps, in all cases even then. They are noted however in 41 cases, of which

four only were fatal, so that these are even a more favourable sign than the rose spots.

Having completed his analysis of the symptoms, our author proceeds to observe that certain of them appear more frequently, or with unusual severity, at particular periods. This, he says, attracted his notice when engaged in practice, and was quite manifest in taking off from the hospital records, the notes on which this report is founded. Thus, in all the cases taken together, one in 2 had a dry tongue. But in the latter part of 1828, and beginning of 1829, there were, in 11 successive cases, nine which had this symptom. In 1831, in 15 successive cases, there were 11 with the same. In 1834, this symptom was present in 10 of 12 successive cases; and in 1835 it was noted in 22 of 27 successive cases. The same was found to be true of epistaxis, watchfulness, and other symptoms, the precise proportion of which in different years it would be unnecessary here to detail. The mortality too was very different in different years. Thus, in 1829, there were 25 cases, one of which only proved fatal; and this one occurred in January, and might be supposed, as Dr. Jackson says, to have its character from that of the autumn of 1828. Of the remaining 24, not one proved fatal. It is especially worthy of remark that the cerebral symptoms here appeared much less than in the average of all the cases.

That diseases vary at different periods, and in different years, both as regards their mortality, and the relative frequency of particular symptoms, is generally admitted, but it is rare to find the character and amount of those varieties stated with such precision, and based upon such unquestionable data as in the essay before us. The facts above noted, too, are highly important, when considered in reference to their bearing upon certain questions of therapeutics, and especially upon one which at the present time is frequently discussed, and to which we have already alluded, viz., the application of the numerical system to therapeutics. The advocates of the latter say that if we take a series of cases of any one disease, occurring in a given place, among persons similarly situated, &c., all of whom were treated upon one general uniform plan, and compare the mortality with that which was found in another series of cases, similarly circumstanced in every respect, but treated in a different manner, we must arrive at a positive conclusion as regards the general value of the two methods of treatment which were adopted. That this proposition is correct can hardly be denied, for it is evident that in the comparison of a large number of cases, individual differences would be compensated, provided the general character of the cases was similar. But how is this similarity to be determined? Evidently not merely by choosing our cases among those which are admitted into the wards of a hospital, and whose sex and mean age are the same; and yet this is almost the only test *uniformly* put in requisition by those who have attempted such comparisons. Now, if the statements of Dr. Jackson be admitted, it follows that the cases to be compared must have occurred in the same year, and even at the same period of the year; that they must have been admitted into the hospital at the same mean period from the commencement of the disease; that the mean frequency of the pulse; that the mean severity and comparative frequency of the other prominent symptoms, at least at the time of admission, should be the same. Other requisites might be mentioned, but as the facts before us do not bear upon them, we shall not allude to them. Now, how often have *all* the above conditions been taken into the account by those who have compared numerically the success of different methods of treatment? Not once. Nevertheless, without them, the comparison is useless, because the conclusions are utterly worthless. The fact is, we believe, that the numerical system admits of only a very limited application to therapeutics, and in a manner very different from that hitherto adopted.

Previous to October, 1833, the intestines, says Dr. Jackson, were not examined in a proper manner. In all the patients, who died of the disease under consideration, from October, 1833, to the end of 1835, and were examined, the appearances were the same as those described by M. Louis. The number examined was 11, and in none was there a perforation of the intestine. Several cases are given illustrative of the morbid appearances.

We shall not follow our author in his attempt to appreciate the effects of remedies by means of a numerical analysis; for, although he has exercised great discrimination and judgment in forming it, it seems to us that the results are at best uncertain; at least with one exception, and that is in reference to the value of emetics in the early stage of the disease. We shall therefore conclude our notice of this highly interesting report, by a very brief outline of the conclusions which Dr. Jackson thinks "*probably just*" in reference to the treatment, and which we presume have the sanction of his general experience, independent of numbers.

1. Perfect repose of body and mind from the very commencement, the diet being restricted to the simplest liquid food.

2. The early administration of an emetic of tartarised antimony, to be followed by an active cathartic, or the two in combination. If the vomiting and purging are not followed by great relief, venesection should be practised on the following day, unless the constitution should be very feeble, or the case very mild.

3. If the disease has not subsided after the evacuation, tartarised antimony should be given after the method of Odier above mentioned. The bowels should be kept open.

4. If the disease subsides early under active treatment, it is essential that the patient be restrained from solid food for two or three days after he has an appetite for it; also, that he be prevented from making any efforts of body or mind until convalescence is firmly established.

5. Vomiting and purging may be resorted to with advantage in the second week, but after that period no active treatment should be employed, or none which will cause any serious inconvenience to the patient. T. S.

ART. XV. *Nature and Treatment of Diseases of the Ear.* By Dr. WILLIAM KRAMER.

Second edition of the author's treatise on chronic deafness, much improved and enlarged. Translated from the German, with the latest improvements of the author since the last German* edition. By James Risdon Bennett, M.D., &c. &c. London, Longman & Co., 1837: pp. 307, with two plates. Philadelphia, Thomas, Cowperthwait & Co., 1838: pp. 250.

THE professed objects of Dr. Kramer, in the monograph before us, are, as expressed in his own words, "to arrange diseases of the ear in a more natural manner than has hitherto been done; to refer them to definite organic alterations of the constituent parts of the ear; to avoid all hypothetical and speculative assumptions; to establish the diagnosis of each form of disease, by the exposition of objective symptoms, independent of the ever doubtful accounts of patients, and on this sure basis to establish a plan of treatment as simple and certain as possible." He finds that these objects have been neither attained, nor even kept in view, by the authors who have preceded him; that their descriptions of disease are in many instances hypothetical, and not based on the discriminating and careful observation of symptoms; and that of the very numerous remedies which have been proposed, scarcely one is fitted to answer the indication which has been assigned to it. To prove the latter proposition, which at first appears somewhat startling, he enumerates a host of remedial agents, some of general and others of local action, most of which he condemns in toto as of no utility whatever, and the remainder have, in his opinion, been so grossly perverted and abused by being applied to forms of disease to which they were entirely unsuited, as to have been productive of far more injury than advantage. Some of his strictures under this head are certainly rash and unfounded, and even contradicted by his own subsequent recommendations of the articles he condemns;

* In the American reprint, the word London is substituted for German, a typographical error calculated to lead to some misconception.

while the entire justice of many others cannot be disputed. The following are the local remedies which he thus passes in review.

1. *Electricity*.—As an evidence how little this agent is to be relied on in deafness, he states the fact, that of the eighty numbers of Hufeland's Journal, so rich in cases of every description, only two contain cases of its successful employment. Both these were treated by a non-medical man, and in neither was there any investigation what part of the ear was the seat of disease. One, a case of first attack of deafness from cold, and cured by one sitting, proves nothing by proving too much; and the other is found equally objectionable. One case alone, of all that are recorded, is, with some reservation, admitted. It is that of a sexagenarian, cured by one Busch, who, after electrifying his patient ten times, heard a pop, and the deafness vanished. Busch supposes that the deafness was owing to obstruction of the Eustachian tube, but did not ascertain the fact. It appears that if electricity is adapted to any form of deafness, it is so to that in which there exists a torpid state of the auditory nerves, and that the opposite condition, or erethism, is always aggravated by its use. The latter, however, is by far the most frequent form of nervous deafness, forming, according to the author's observation, 14-15 of the cases of this character.

2. *Galvanism*, which has found as many admirers as electricity, is equally unworthy of confidence. Of sixteen cases of deafness treated in this way by Grapengiesser, thirteen were more or less failures, and in three others there is no evidence that the improvement was permanent. This remedy was tried in the Berlin institution for the deaf-dumb, on eighteen persons, without any advantage in any case, and in some with positive ill effects. Two of three deaf-dumb persons, on whom Pfaff operated, derived, however, some benefit. Dr. Castberg treated in this way thirty-three patients labouring under dulness of hearing; the treatment was continued from one to three months. In all, improvement was noticed during the first five or six days, which afterwards entirely vanished. This result is confirmed by Schubert, who finds the hearing only so far improved as the general nervous irritability is augmented, and that, whenever the system reverts to its normal state, the apparent improvement at once vanishes.

3. *Mineral Magnetism*. Considering the singular character of this remedy, the improvement produced by it is somewhat remarkable. One patient, of a Dr. Unzer, was cured by it in eleven days, of a deafness which had continued for twelve weeks. In 1834, a Dr. Schmidt, who reported himself from Philadelphia, persuaded many of the good people of Berlin to submit to this agent, and obtained no little credit for the cure of deafness. He had the prudence, however, not to impair the warmth of public feeling towards him by too protracted a stay, and his successor in the same line of practice was not equally fortunate. In the same city, Dr. Barriés tried this agent in the deaf-dumb institution on fifty-eight subjects, fourteen of whom he pointed out to our author as "hearing perfectly;" which hearing, Dr. K. contends, depended in most cases on a careful observation of the motion of the lips of the person who spelled the words. In other cases he admits that the nervous irritability was increased in the same manner as by the galvanic action already mentioned.

4, 5. *Moxa, and the actual cautery*, are regarded as remedies in whose favor no direct evidence can be adduced, and which, from their violence, threaten serious injury to the auditory nerves. *Blisters* are only indicated in topical circumscribed inflammation of the meatus, &c., and even here are doubtful. In obstinate diseases of the middle ear, they are useless, and in nervous deafness positively injurious. In all cases in which it is indicated, our author prefers to excite external irritation by means of tartar emetic, rubbed in below the mastoid process.

6, 7. *Issues and Setons*.—These remedies, in the author's opinion, are productive of more injury by the profuse discharge which they occasion, than of benefit by their agency as derivatives. Indeed, all the advantage which they offer in this view, can be attained with more certainty and less inconvenience by the tartar emetic ointment.

8, 9. *Stimulating douches, drops and injections*, introduced into the external meatus, always produce ultimate injury, even when followed by temporary im-

provement of the hearing. The popular injections especially, such as cajeput oil, camphor, opium, onion-juice, oil of cloves, tincture of castor, eau de cologne, &c., are capable of producing violent and dangerous effects. Even tincture of castor, one of the mildest of these, in the dose of one drop, with two of wine, introduced into the meatus, was found to occasion heat, followed by inflammation, which produced difficulty of hearing and tinnitus. Still more danger is to be apprehended from these stimulant substances, when introduced into the ear in the form of ointments.

In regard to remedies of general action, our author remarks, that aural affections, even when dependent on general causes, are scarcely amenable to general treatment. It is here a great error to imagine that, by removing the cause, the effect will also be made to yield. For example, when a general catarrhal affection of the respiratory organs has been transferred to the ear, it is rare that the aural affection will yield to the treatment which removes the pneumonia. Only very slight diseases of the ear, and of recent origin, form exceptions to this rule. Thus slight rheumatic otalgia may yield to sulphur baths, and slight glandular otitis, in scrofulous subjects, to iodine. In general, however, the ear disease soon becomes independent of the more general affection, and requires its appropriate topical treatment.

1, 2. The first-mentioned remedy of general action, the *Russian Vapour Baths*, would seem to be highly popular in Germany, though scarcely known to us as a remedy for deafness. They are condemned in the strongest terms by Dr. K., who asserts that no relief whatever has hitherto been afforded by the Russian bath in any kind of aural affection. *Warm baths* meet with as little favour; and in regard to *sea-bathing*, while he allows to it some beneficial action on the system, its effect is always to increase tinnitus and deafness if previously present, and very frequently to cause them if absent.

3, 4, 5. *Emetics, purgatives, and bleeding* are to be held equally injurious in nervous deafness, the latter remedy especially so. Even though some temporary benefit may be experienced by the relief of the tinnitus, this symptom is always sure to recur after bleeding with increased violence, and to become incurable. In recent slight obstructions of the Eustachian tube, an emetic will sometimes remove the collection of mucus; but this may always be effected by more direct means. In inflammatory affections of the organ, bleeding is decidedly indicated, and cathartics may be regarded as a secondary remedy. In the dulness of hearing which follows upon nervo-gastric fevers, and which usually disappears spontaneously, he allows some efficacy to the action of aloes, an admission the more remarkable, as this form of deafness deserves more than perhaps any other to be regarded as purely nervous in its character.

6. *Salivation*. The author is perfectly persuaded that mercurials can never be indicated by any disease of the ear, considered as such. Others have expressed a different opinion, and, in particular, he quotes from Dr. Fritz, of Prague, the assertion that he had cured fourteen persons by inunction, after all other remedies had failed. To this experience, so superficially stated without details, it must be allowed that no very great importance is due.

Dr. K. admits that previous to the attack in the particular disease, the general condition of the patient should be examined, and that in this, indications may be found for the employment of general remedies; but he maintains that by far the larger part of aural diseases are of a simple nature, and not accompanied by general diseases which stand in any intimate connection with them. He urges, therefore, the closest examination of the external and middle ear, without which examination the management of the case, so important to the patient, is left to the disposal of the blindest chance. As an illustration of the negligence with which this investigation is generally performed, he states that of three hundred who, at different times, applied to him, thirty-five were suffering from chronic affections of the membrana tympani, which, in twenty-eight, was partially destroyed; and this, without the practitioners by whom they had been attended having even suspected the presence of these morbid states.

The following table exhibits the amount of observation on which Mr. Kramer's essay is founded, as well as his mode of classification and the success of his treatment in different affections:

Tabular View of the Curability and Frequency of Diseases of the Ear.

NAME OF THE DISEASES.	Incurable and not treated.	Cured.	Relieved.	Uncured.	TOTAL.	
OF THE AURICLE.						
Erysipelatous Inflammation . . . . .	..	1	..	..	1	} 3
Scirrhus Degeneration . . . . .	..	2	..	..	2	
Furuncle . . . . .	..	..	..	..	..
IN THE MEATUS EXTERNUS.						
Erysipelatous Inflammation . . . . .	..	17	..	..	17	} 46
Inflammation of the Glandular Integu- ment	3	9	13	..	25	
Inflammation of the Cellular Tissue . . . . .	..	2	..	..	2	
Inflammation of the Periosteum	2	..	..	..	2	
OF THE MEMBRANA TYMPANI.						
Acute Inflammation . . . . .	..	1	..	..	1	} 36
Chronic Inflammation	11	7	17	..	35	
IN THE CAVITY OF THE TYMPANUM AND EUSTACHIAN TUBE.						
Inflammation of the Mucous Membrane, with Obstruction . . . . .	..	28	6	..	34	} 55
Inflammation of the Mucous Membrane, with Stricture of the Eustachian Tube	16	..	3	..	19	
Inflammation of the Mucous Membrane, with Obliteration of the Eustachian Tube	1	..	..	..	1	
Inflammation of the Cellular Tissue of the Cavity of the Tympanum . . . . .	..	..	..	1	1	
IN THE LABYRINTH.						
Erethitic Nervous Deafness	60	21	52	7	140	} 152
Torpid Nervous Deafness	3	8	1	..	12	
Deafness and Dumbness	8	..	..	..	8	
	104	96	92	8	300	300
		188 relieved				
						In the External Ear.
						In the Middle Ear.
						In the Inter- nal Ear.

It will be seen from the above table, that 104, or more than one-third of the cases were absolutely rejected as incurable at the outset. Seventy-one of these were diseases of the internal ear, and sixty were cases of erethitic-nervous deaf-

ness. Of eighty cases of the latter affection in which treatment was attempted, twenty-one were cured, fifty-two relieved, and seven dismissed uncured. This constitutes, therefore, by far the most intractable form of aural disease.

Erysipelas of the auricle is often the result of local irritation, but frequently also is connected with a similar affection of the head and face. It requires little topical treatment beyond ablution of the part, even syringing being seldom necessary.

Scirrhus degeneration commences something in the same manner as erysipelas, but assumes a more chronic character. In the course of its progress swelling occurs, of a bright or dark-red colour, which gradually involves the whole surface of the auricle, so that this comes to present a knotty shapeless mass. Small vesicles appear on the swollen surface, sometimes secreting a serous and sometimes a lymphatic fluid. Excoriation and ulceration may follow, and the auricle thus be destroyed. Burning pain is always present, but seldom fever. This disease, if neglected, will almost certainly run into a chronic state, as the resources of nature are perfectly powerless. If the disease be owing to the extension to the ear of chronic impetigo, or lepra, these diseases will require the first attention, and must be attacked with sulphur baths and Zittmann's decoction. The remaining treatment consists in maintaining cleanliness, in purging and dieting the patient, in applying zinc ointment to the ear, and in irritating the mastoid surface by means of tartar emetic. Excisions of degenerated portions must be practised if necessary.

Furuncle of Auricle. Of this disease, which is of familiar occurrence, it is unnecessary to detail the symptoms or treatment.

In introducing the subject of the meatus externus, our author dwells somewhat on the mechanical contrivances which have been recommended for facilitating the inspection of the membrana tympani. He recommends the employment of a speculum, which consists of a funnel, divided longitudinally, and connected at right angles with two forceps handles: pressure on these opens the funnel, and thus exposes the meatus. The funnel should be rendered dull, or painted, on its inner surface. The direction given to the handles prevents them from obstructing the vision of the operator. The light may be derived from an argand lamp, provided with a powerful mirror, or, what is generally better, from the sun.

In treating the external meatus, our author thinks that an undue degree of importance has been attached to the cerumen, especially by Buchanan, who regards a certain amount and arrangement of this secretion as essential to the maintenance of the form of the passage, and, therefore, to the proper transmission of sound. This hypothesis Dr. K. judges to be wholly groundless. He also repudiates the idea that deafness can be dependent on deficiency of cerumen, and cured by the introduction of ointments intended to act as substitutes. "Deviations in the quantity and quality of the cerumen are generally unimportant attendants on other diseases of the ear, but very seldom exist independently, and then exert no important influence on the function of the organ."

Erysipelatous inflammation of the meatus is accompanied with a superficial redness of the auditory canal, without swelling or diminution of its caliber. In the course of two or three days, broad dry cuticular scales are thrown off, and an increased secretion takes place of very tenacious cerumen of a bright or dark brown colour, mixed up with the cuticular scales, and firmly adherent to the walls of the meatus, which is thus completely stopped up. The auditory canal is, generally speaking, very sensitive to the least touch; the patient feels his ear full and obstructed: it seems as though a veil were drawn before it. The disease usually develops itself suddenly, and may often be traced to cold. By inspection, under favourable circumstances, the brown shining mass which fills the ear may be detected; and it is in the removal of this that the treatment mainly consists. This object is best effected by the injection of simple warm water; the previous introduction of oil is not necessary. After washing out the ear, if the meatus is found much reddened, a solution of acetate of lead, one grain to the ounce, may be dropped into, and tartar emetic ointment rubbed behind the ear.

Inflammation of the glandular structure of the meatus is marked by tumefaction, sometimes pale and sometimes of a red colour; either spongy, consisting of vesicular eminences closely set together, or of distinct pustules, containing a lymphatic or purulent fluid, or firm, uniform and even. One or more days after the commencement of the disease, a serous or muco-purulent fluid is seen at the entrance of the meatus; sometimes of a mild character, at other times acrid and corrosive; scanty or abundant in quantity; of a green or yellow colour; streaked with blood, dirty or whitish; of a sweet or very disagreeable ammoniacal odour. This disease, even in the worst and most chronic form, never extends beyond the limits of the glandular structure. Even the most acrid secretion, producing excoriation, does not penetrate the bone; it never induces true ulceration, nor does it ever destroy the membrana tympani. If left to itself the disease will continue for a long time, having no determinate period. The most frequent exciting cause is cold, from the application of cold water (of which fluid our author seems to have an especial dread) or from draughts of air applied to the surface when heated. It may also be produced by the extension of cutaneous eruptions to the organ; or by mechanical or chemical irritants. *The disease is never caused by hardened wax.* The plan of cure suggested is extremely simple, consisting principally of injections of warm water, the application of flour to the excoriated surface, &c.

Thus far we recognise in the disease described the purulent otitis, so commonly met with in practice, and especially common in young subjects. But besides this our author arranges under the same head, and describes by the same title, the inflammation arising from the introduction of foreign bodies into the meatus; and with still less propriety, as it seems to us, the morbid growth usually termed polypus. In regard to the former there is little of novelty in his treatment; he advises the removal of the foreign body, and mentions the usual means employed. He condemns, with great justice, the barbarous method employed formerly of suspending a child by the legs and shaking him, or fastening an adult to a plank with the ear downwards, and then jolting him up and down; and the scarcely less irrational plan of making an incision from behind forwards, in order to lay open the meatus, when the foreign substance is deeply imbedded. For polypi when pedunculated, he recommends excision, in preference to ligature, even when the latter is practicable. Sometimes the body may be laid hold of with a forceps, and twisted off; and if very soft and vesicular, a simple wound will sometimes cause it to collapse. The roots which remain after excision or ligature must be attacked with nitrate of silver, which, though seldom entirely successful in extirpating the disease, is safer and more effectual than any other caustic substance.

Phlegmonous inflammation of the meatus, is among the rarer forms of aural disease. It is distinguished by fever, which is particularly violent towards evening, attended with great heat, and allowing the patient little or no sleep. Violent buzzing in the ear, and great diminution of hearing, are invariably present. In slight cases, the disease pursues the course of a furuncle, opening and discharging its fluid at the tip. In the more severe, the suppuration is general throughout the tumour. The duration is from three to seven days, and the termination invariably the same, though topical bleeding may allay, for a while, the violence of its progress. The opening which occurs, always heals kindly, but sometimes the membrana tympani is permanently thickened, and the hearing remains dull. The cause is usually cold. The treatment should be such as to favour the formation of pus, and consists principally in leeching and fomentations. Low diet and purgatives fulfil the more general indications.

Inflammation of the periosteum.—The first symptom remarked in this disease, is a red swollen spot deep in the meatus, which after a time opens and discharges a quantity of thin, fetid, filthy pus. At the bottom of the opening, whence the pus issues, a rough surface is detected by the probe, which is either that of the bony meatus, or of the mastoid process. In the course of the disease these bones exfoliate, and fragments, appearing at the opening, either come away with the pus, or are removed by forceps. The progress of the disease is often very slow;

sometimes years elapse before the process of exfoliation is completed, and the fistulous opening is permitted to heal. The healing process, too, often takes place irregularly, and in such a manner as to close the meatus for some lines in length. The treatment of this disease must have for its principal object the removal of the cachexy, on which it depends; the topical treatment is simple. When closure of the meatus has occurred, it is often necessary to perforate the obstruction; and this is best accomplished with a small trocar. The opening thus made must be enlarged by a crucial incision, and reunion prevented, if possible, by touching the parts with lunar caustic. Bougies are of little use for this purpose, and the sponge compress of still less. The attainment of this object is, after all, difficult, and though it be accomplished, the hearing usually remains feeble.

In entering on the diseases of the *membrana tympani*, the author combats the prevalent notion that relaxation of this membrane is the proximate cause of deafness. The greatest mistake on this subject seems to have been committed by Curtis, who supposes it possible for the membrane to be driven in by loud noises, and so to become concave externally, thus overlooking, or ignorant of the fact, that this is the natural position of the organ.

Acute inflammation of the membrana tympani is marked by pain at the bottom of the meatus, extending to the throat. The meatus, in mild cases only slightly reddened, becomes, in others, of a blood-red colour, swollen, protuberant, and opaque, with thick bundles of vessels running over it. The pain is acute, and the fever severe. In the progress of the disease, if neglected or mismanaged, ulceration and perforation of the membrane occur. Even under the best treatment, the transparency of the membrane is lost, and the hearing permanently impaired. This disease must be attacked with local bleeding and fomentations, while tartar emetic ointment is rubbed in over the mastoid process. It is in the chronic stage of this disease that perforation of the membrane is sometimes admissible. The only true indication for this operation, admitted by our author, is a thickening of the membrane, *unaccompanied by any other disease of the ear*. The best instrument for performing the operation, is one termed by him *Himly's punch*, which removes a round portion of the membrane, and thus makes an opening which does not again close. Another, invented by Deleau, is better adapted for cases in which the membrane has become hard and cartilaginous. The perforation should be made in the anterior and inferior third of the membrane, so as certainly to avoid the insertion of the malleus. The aperture keeps open of itself.

In *chronic inflammation*, the membrane is observed to be reddened, opaque, thickened, uneven and swollen. Most frequently one or more openings are observed, which vary in size, and sometimes involve two-thirds of the membrane, so that the interior of the tympanum is exposed to view. When this is the case, the Eustachian tube is always free; so that, if the patient expire strongly with the nose and mouth closed, the air escapes through the opening in the membrane with a whizzing noise. Even with considerable loss of substance of this organ, the hearing may continue tolerable. The meatus is usually sound, thus proving the affection of the membrane to be an independent affection. The diagnosis of the disease may be established by syringing out the meatus, examining it by the aid of the speculum in clear sunshine, and testing the state of the membrane with a probe. The prognosis is generally bad. The disease is apt to be neglected by the patient, and, when he at length applies for advice, to be aggravated by irritating applications. If attacked during its earliest stage, the malady admits of radical cure; but when it has existed longer, although the inflammation may be removed, opacity and thickening of the membrane are almost certain to remain. The first object in the treatment is cleanliness. The meatus should be entirely freed from mucus, and a solution of the acetate of lead, prepared with one to ten grains to the ounce, dropped into it. This article removes, in the happiest manner, the ammoniacal odour of the discharge. In this, as in the last mentioned form of affection, perforation may sometimes be indicated, but the cases adapted to it are found very few in number.

As diseases of the middle ear, Dr. K. classes only those having their seat in the tympanum or in the Eustachian tube, some of which are within reach of

surgical treatment, and all susceptible of more accurate diagnosis than those of the labyrinth. Of these diseases there are two natural divisions, according as they are seated in the mucous or cellular tissue respectively. Before describing them, our author goes somewhat at length into the history of an operation which he professes to have improved, and from which he appears to have obtained very satisfactory results.

Catheterism of the Eustachian tube, like lithotrity, owes its origin to the ingenuity of a non-medical man, stimulated by experience of personal suffering. Guyot, a postmaster at Versailles, succeeded in 1724, in passing a silver tube through his mouth into the passage in question, and, by injecting warm water, cured himself of obstinate deafness. Since then the operation has been frequently practiced, though it would appear to have fallen much into discredit as a curative means. The improvement of passing the catheter through the nose instead of the mouth, is due to the school of Montpellier. Within ten years, Deleau, an aurist in Paris, has gained some credit by curing deafness in this manner. His injections are gaseous only, and for the most part consist of atmospheric air. We have now before us a pamphlet by this surgeon, published in 1830, rather pompously announced as an "Extract from an unpublished work, entitled Treatment of those Maladies of the Middle Ear, which produce deafness, preceded by reports of the Academy of Sciences," in which he gives a large number of cases cured or relieved by his air injections. Most of these appear to have been cases of catarrhal inflammation or of partial stricture; but those which excited most attention, and drew upon M. Deleau the éloges of the academy, occurred of subjects in the deaf and dumb institution. One of these subjects, named Honoré Trezel, a child of ten years, is said to have been so far restored as to be able to repeat words and sentences uttered in his presence, to read, and to receive and execute commissions with great facility. So well satisfied were the academy, that these statements were well founded, that they voted to Deleau the Monthyon prize, and placed 6000 francs yearly at his disposal, that he might follow up the work so happily commenced, and educate a certain number of deaf-dumb pupils. But our author, it appears, is not disposed to let M. Deleau repose upon his laurels without disturbance. He denies that hearing and speech were restored to Honoré Trezel; asserts that this apparent "hearing" was independent of any impression made upon the auditory nerve; reviews, one by one, all the cases in which his Parisian rival professes to have accomplished these extraordinary results, and concludes by declaring, without hesitation, that no deaf mute has been cured, that is, has been rendered capable of communicating with his fellow men in all respects like a person who hears well.

Our limits will not permit us to enter into the merits of this controversy, which appears to be carried on by Dr. K. with more temper and acrimony than befits the occasion. Like others, under similar circumstances, M. Deleau has no doubt been too much elated by some partial success, and is disposed to put the most favourable interpretation on the results obtained; but we see no reason to attribute to him any wilful misrepresentation. The simple fact that, by the means in question, hearing was restored to an individual previously incapable of perceiving sound, is too well attested to admit of reasonable doubt; but our author's experience agrees with that of M. Deleau in finding the operation mainly applicable to cases in which the deafness is not congenital, or total, but in which it depends on obstruction of the Eustachian canal by inspissated mucus. Dr. Kramer differs from Deleau, however, in preferring an inflexible silver catheter to one of elastic material with an iron stilet. His instrument is six inches in length, curved within five lines of one extremity, at an angle of 144° , and provided at the other with a ring. It is introduced, with the concavity downwards, into the inferior nasal meatus, and carried forward, until the beak touches the posterior surface of the pharynx; the instrument is then gradually rotated, and thus guided into the tube. The principal fluids injected by Dr. K. are atmospheric air and the vapour of ether. To the water douche there are serious objections on the score of convenience to the patient, and it answers no

indication which cannot be as well fulfilled by a gaseous fluid. The air may either be blown in by the breath, or, if a more powerful blast is demanded, may be condensed in an air pump, and transmitted thence through a tube provided with a stopcock to regulate the jet. Of this apparatus, as well as of another intended for the production of acetous ether, &c. drawings are given in the work. The catheter, however, may be made to subserve another use, namely, that of introducing a bougie into the tube, and through this up to the cavity of the tympanum. This operation is said to have been successfully practised in cases where so complete an obstruction of the passage existed that the air could not be forced through it. Such are the operations proposed by Dr. Kramer. We proceed to mention the forms of disease to which they are applicable.

Inflammation of the mucous membrane of the Eustachian tube with accumulation of mucus. Our author rejects, as uncertain, all the symptoms of this state, which have been proposed by previous writers. Among them are certain subjective symptoms or sensations described by the patient; as, for example, that of a veil or flap hung before the ear, a crackling noise, a tickling irritation in the meatus, the aggravation of the disease from change of weather, &c. It has been advised as a means of testing the point, to direct the patient to impel the air forcibly against the membrane, by attempting to sneeze with the mouth closed. In doing this, the air is sometimes felt to enter the tympanum; but this sensation is not sufficiently distinct to be depended on. Some of the objective symptoms are equally fallacious. Lentin, for example, has the patient's head placed upon a table, fills the affected ear with water, directs him to expire with the mouth and nose closed, and then observes whether the water moves or not. If not, he concludes that the tube is closed. The experiment, however, is practically useless, because no patient can hold his head sufficiently still to allow of its success. The only test, therefore, admitted by our author, as worthy of confidence, is to inject a stream of air into the tube according to the method already described. The existence of the disease is rendered certain, when the air passes directly to the membrane, with an audible gurgling noise, producing a sense of relief, and an improvement in the power of hearing; and equally so, when this effect takes place only after repeated trials. If, after the fourth sitting, no sound of this kind is audible, and no improvement takes place in the hearing, the inference will be, that stricture or obliteration of the canal has taken place. This last, however, is never an effect of the accumulation of mucus, but must always be the immediate consequence of inflammatory action.

At an early period of the disease, the mucus often becomes spontaneously loosened, and the hearing is relieved with a peculiar sensation, which our translator terms not unaptly a pop. This mode of cure, however, is not to be expected after the accumulation has continued for a considerable time: and other means must then be resorted to. The medical and general treatment usually adopted for this purpose need not be recounted; we agree with our author that it is generally unavailing. An operation has been proposed by Itard which consists in perforating the membrane, and injecting the tympanum and canal through the artificial opening. The violence done to the parts, and the difficulty of giving a proper direction to the injected fluid, without employing a dangerous degree of force, are the objections to this proceeding. These objections do not apply to the catheterism of the tube and the transmission of fluids in that direction. From aqueous injections employed in this manner unquestionable advantage may be obtained; but for reasons already stated, Dr. K. has been led to the substitution of air for water. Even the air douche should be so regulated as to act at first only with very moderate force, and, if this is found insufficient to overcome the obstruction, it may afterwards be augmented. Whenever the air obtains free admission into the canal, the relief is complete, provided the mucous engorgement be not complicated with nervous affection or organic change; in this case the improvement, at first progressive, becomes stationary after attaining a certain point. Even after entire cure, in feeble constitutions, there is a decided

tendency to relapse, which must be counteracted by active exercise, washing and gargling with cold water, early rising, and temperate habits.

Inflammation of the Tube with Stricture. The presence of this disease may be suspected from a peculiar morbid condition of the soft palate and fauces, tumefaction of the tonsils and nostrils, a tendency to obesity, &c.; but these signs cannot be depended on. Even the water and air douche are here fallacious tests; these fluids will not pass to the cavity of the tympanum, and the general swelling will always render it doubtful whether the catheter has actually been engaged in the Eustachian tube at all. No way remains of resolving this doubt but the introduction of the catgut bougie, in the manner already mentioned in describing the catheter. The point of the bougie, at first arrested by the stricture, presently passes on into the cavity. On withdrawing it again, there is a sensation as if it were held fast by the stricture, and, in some cases, the passage appears to the patient to close again behind it. If the tube, in place of being closed at one point only, is swollen through its whole extent, the sensation felt by the operator in passing it is more uniform, and it slips through the whole tube without encountering particular opposition at any one point, till it arrives at the membrane, in touching which it occasions to the patient a sense of pricking. This general and uniform tumefaction of the passage constitutes a more manageable variety of the affection than a partial degeneration of the mucous membrane, under the form of stricture. Under all circumstances, however, the prognosis is unfavourable. The primary treatment should be directed to the improvement of the constitution, and to the removal of the chronic inflammation of the throat and fauces. If this last object can be accomplished, the attempt may be made to overcome the obstruction of the tube by means of the bougie. The advantage which catgut, as a material for this purpose, possesses over the gum elastic, is its disposition to expand under the joint influence of warmth and moisture; it may also be manufactured of any size, so as to adapt itself to the smallest stricture. The string, when once passed into the tympanal cavity, may be cut off at the nostril, secured by sticking plaster, and permitted to remain till it swells and softens. Other expedients for dilating the passage under these circumstances, as the sponge compress, and the air douche, our author rejects as utterly hopeless. Even the operation with the bougie seems to have furnished him no very satisfactory results; for the three cases in which he practiced it, and which he reports at some length, were all eventually dismissed as incurable.

The same was the unfortunate termination of the case of *inflammation of the mucous membrane of the canal with obliteration*. Here the bougie proved of service only by furnishing evidence of the condition of the parts. It is worthy of remark, that, in this case, the patient believed that, by expiring, she could distinctly force the air up to the membrane. This sensation was obviously illusory, for neither air nor water, nor the catgut thread could by force or contrivance be made to pass. No treatment was attempted.

Cellular inflammation of the tympanum, or true internal otitis, may be either acute or chronic. In the former case, decided fever occurs, with acute pain, felt usually at the bottom of one ear. The pain extends to the pharynx, produces difficulty in swallowing, and is accompanied with tinnitus, great sensitiveness to noise, and deafness. At a later period, it reaches the mastoid process, the temporal bone, the vertex and the occiput. The fever augments, delirium occurs, the nights become sleepless, and the pain insupportable. In the midst of these symptoms, the abscess suddenly discharges, either through the tympanum or the mastoid process, a pus of offensive odour, sometimes mixed with bony fragments, or even with the small bones of the ear. In the most favourable cases, the discharge is followed by an alleviation of all the symptoms, but permanent otorrhœa and dulness of hearing remain. In the worst cases, hectic fever succeeds to the acute febrile affection, remittent cephalic pains follow, and the patient, rather suddenly, dies apoplectic. In the chronic form of the disease, there is less pain and fever, and death sometimes occurs from coma, without any preceding discharge of pus. In both forms of disease, the post mortem appearances are similar; pus is found in the cavity of the tympanum, in the labyrinth, and

in the cells of the mastoid process; there is softening and carious degeneration of the latter, as well as of the petrous bone; there is suppuration in the brain and cerebellum, and effusion of serum between the membranes. When treatment is of any avail in this affection, it is by keeping the local inflammation within bounds, and, at the same time, favouring the formation of matter.

In regard to disease of the internal ear or labyrinth, our author insists on the impossibility of recognising, during life, organic changes occurring in this cavity; and the absurdity of founding upon these changes any classification of the maladies to which it is liable. The only undoubted form of disease of the labyrinth is the functional affection of the nervous expansion it contains, without appreciable organic change in any part of the organ—in other words, nervous deafness. This kind of deafness, according as it is attended or not with tinnitus, our author terms *erethitic*, or *torpid*. The former he supposes to depend on increased, the latter on diminished irritability of the auditory nerve. As we have some doubts of the justness of this distinction, and the two affections are in all other respects identical, we shall, in availing ourselves of the remarks of our author on this head, refer to both as a single malady.

The onset of nervous deafness is slow and gradual. The patient merely remarks a diminution of the power of hearing, and is reminded of this defect only on particular occasions, when especial acuteness of this sense is needed. If, as often happens, the ears are successively affected, the disease is still more likely to elude observation, until it has proceeded to a considerable extent. Sooner or later, however, noises in the ear begin to be perceived; at first, deep, and compared to the roaring of the sea, or the hum of insects; but afterwards of a more acute and shrill character. Various causes—such as atmospheric changes, depressing passions, intestinal disorder, &c.—produce occasional aggravation, which may alternate with temporary improvement; but, on the whole, the disease is found progressively to increase. As it approaches to complete deafness, the tinnitus gradually lessens, and finally disappears. So long as the patient is able to hear at all, it is remarked that a shrill screaming voice is both painful and unintelligible, while a melodious full tone, accompanied with slow distinct enunciation, is both agreeable and easily understood.

Another circumstance, which has often been the subject of remark in regard to nervous deafness, is that the patient hears better when exposed to some deep uniform noise, as that of a loaded cart rumbling over the pavement, a peal of bells, or a drum. By such noises the nervous sensibility is in a manner revived, so that, while they continue, the sound of a human voice, previously inaudible, can be perceived. Other noises of a harsher kind, such as that of horns, trumpets, &c., have an opposite effect, and render the ear of the patient less sensitive than before.

The presence of nervous deafness can be ascertained without difficulty by careful examination of the external and internal auditory passages. The meatus is found free and usually devoid of ceruminous secretion. The cavity of the tympanum and the Eustachian tube are wholly free from obstruction by mucus; if air be blown into the latter, it is distinctly perceived to pass upward into the tympanal cavity, and to strike against the membrane; while the operator, by applying his own ear to that of the patient, can feel the air pass out of one into the other. This experiment is observed to increase for a time the difficulty of hearing.

Among the predisposing causes of this affection may be mentioned hereditary idiosyncrasy; a general debility of the nervous system; and advanced age. The immediate cause usually assigned by the patient is cold. The prognosis is determined in a great measure by the age of the patient, and the degree which the affection has already reached. In regard to treatment, our author, as usual, finds little to commend in the works of his predecessors. The English practice by calomel, purging, blisters, &c., he condemns, not without reason, as the blindest empiricism; and the no practice of the French finds with him as little favour. The first attention, he admits, must be paid to the improvement of the general health. The topical treatment, which is to succeed, is a modification of

the plan proposed by Itard; and consists in injecting into the Eustachian canal the vapour of acetous ether. For this purpose the ether is dropped into a flask of sufficient capacity to contain about ten quarts, where it spontaneously converts itself into vapour at the ordinary temperature of the room. Connected with the flask, besides the tube through which the ether is admitted, is another for the escape of the vapour. The gas is more or less condensed; and the degree of force with which it issues is regulated by means of water. The catheter introduced through the nose of the patient is connected with the tube of this apparatus, and thus the injection is readily accomplished. In the torpid form of the affection, in which a more rapid jet is required, the ether is vaporised by artificial heat. Of ten cases given in which the ether douche was employed, nine were either cured or materially improved.

Our author gives a chapter to ear-trumpets, and another to deaf-dumbness, both of which contain much practical good sense. To his views on the latter subject, however, we have already briefly adverted, and must here terminate our analysis. The prominent fault of this work is the unjustifiable tone of disparagement in which the labours of all other authors, ancient and modern, are spoken of, and the actual misrepresentation of which Dr. K. is in many instances guilty, in order to set off to advantage his own superior skill or knowledge. Its merits are its brevity, the clearness of the arrangement, the simplicity of the views taken, the practical character of the treatment suggested, and the absence of hypothesis, conjecture, and mystery: How far the particular therapeutic means, which he appears to have applied with so much success, will answer in other hands, remains to be proved; but should even a part of the hopes held out in them, of attacking this obstinate and intractable class of diseases with success, be realised, the obligations of the profession to Dr. K. will be neither few nor small.

E. G. D.

ART. XVI. *Mémoire sur les Véritables Influences que le Tabac peut avoir sur la santé des ouvriers occupés aux différentes préparations qu'on lui fait subir.* Par MM. PARENT DUCHATELET ET D'ARCET. Annales d'Hygiène. Vol. I. Part I. Paris, 18—.

Memoir upon the Real Effects which may be produced by Tobacco, upon the health of the workmen engaged in its various preparations. By Messrs. PARENT DUCHATELET and D'ARCET.

It is a common opinion that the habitual use of tobacco is highly injurious to many persons, and that it frequently gives rise to most serious diseases. It has been said by Ramazzini, Fourcroy, Merat, and others, that those employed in the preparation of this plant, experience violent pains in the head, vertigo, trembling, vomiting, diarrhoea, loss of appetite, &c. M. Merat in the article upon this subject in the "*Dict. Universel de Matière Médicale, &c.*," speaks in unmeasured terms against the habits of smoking, chewing, and snuffing, which have, according to him, a tendency to produce hypochondria, consumption, &c.; and says that physicians cannot exert themselves too much in discountenancing these practices. That the evils above mentioned have been exceedingly exaggerated there can be no doubt. Indeed, should the results obtained by the author of the Memoir, the title of which is given above, be confirmed, these evils will be shown to be, as we have very little doubt they are, to a great extent imaginary.

The Memoir in question presents the results of one of a series of investigations, undertaken in France, for the purpose of determining the real influence exerted by different professions, upon the health of those engaged in them. These investigations have been entered upon for the twofold purpose of determining what measures are calculated to render certain employments less injurious, and in what cases deleterious influences have been erroneously attributed to them. The greater part of the assertions of authors in relation to these questions must be

distrusted, because, until lately no sufficient investigation of them has been undertaken, and, consequently, the data requisite for the formation of solid conclusions have been wanting. Indeed, these assertions, far from being the result of long continued observations, are derived from the generalisation of a few facts accidentally noticed, and in this way, says our author, the inconveniences of some professions are singularly exaggerated, whilst to others are attributed influences which they do not exert. In the present instance, the facts upon which the conclusions of MM. Parent Duchatelet and D'Arcet are based, were derived from a careful inquiry into the condition of the workmen in the ten large manufactories of tobacco in France, where this branch of industry constitutes a government monopoly. The manufactory at Paris employs 1054 workmen. These were frequently visited, whilst at the same time much important information was obtained from the director of the establishment, and from the physician in attendance. Not satisfied, however, with the data furnished by this vast establishment, our authors were desirous of obtaining similar ones from the other factories in the kingdom. For this purpose they made application to the proper officer, who issued an order requiring that in each of these factories, replies should be given to a series of questions which were proposed. Every director of an establishment was required to call together, for this purpose, the physicians, surgeons, and other officers of the establishment; to submit the questions to them; and then to frame the replies, only after the subject had been fully and completely discussed. In the ten factories in France, 4518 labourers are constantly employed. Of these, 2426 are men, 1517 women, and 328 children of both sexes. The data derived from these sources are the more conclusive, inasmuch as they were furnished simultaneously from parts of the country the most remote from each other, and by men who had had no communication with one another.

In order that the influence exerted by tobacco might be better appreciated, a slight sketch is given of the different manipulations which it undergoes to prepare it for use. Without going into the details of these operations, it will be sufficient for our present purpose to observe that some of the labourers are constantly enveloped in a cloud of dust, formed in part of tobacco in very fine powder; that others are obliged to inhale a dense and nauseous vapour given off in drying; whilst all are exposed to the emanations constantly arising from it during the various processes to which it is subjected. We shall now proceed to give a short analysis of the results of our author's investigation.

The first question examined, is whether the labourers experience any derangement in their health, immediately after their entrance into the manufactories, and whether they have any difficulty in accustoming themselves to the emanations arising therefrom? The replies to the above question, from the directors of the different establishments, are successively given. The originals of these documents are deposited with the minister of finance. By a reference to them it is apparent that the fact of a workman being unable to accustom himself to the emanations from tobacco, is almost without example; and that further, with very few exceptions, the labourers but recently exposed to them suffered no material inconvenience. Here and there one was affected with vomiting or other gastric affections, and even with diarrhoea; but these symptoms were observed only in those who were exposed to the most concentrated vapours.

The second question to be determined is the effect of tobacco upon the health of those who have been a long time exposed to its emanations.

It has been confidently asserted by authors that those engaged in the preparation of tobacco were especially liable to colic, rheumatism, hæmorrhages, and affections of the chest; and that, in advanced life, they became thin and asthmatic. The replies of the physicians and others upon these points show conclusively, that the assertions just mentioned are altogether gratuitous, and unsupported by facts. These replies, with one exception, uniformly state that those employed in the tobacco manufactories are not more subject to the above complaints than individuals engaged in other factories, but otherwise similarly circumstanced. In some, indeed, it is mentioned that they seemed to be less liable to the prevailing diseases, especially of a miasmatic character. In two

only is it stated, that the fumes of tobacco "are *perhaps* injurious to delicate chests;" whilst, on the other hand, it is at the same time *expressively* and *positively* announced, that they exert no deleterious influence whatever upon a healthy chest. As regards the opinion entertained by some that the individuals in question become pale and sallow, it is unequivocally denied by our author, upon the ground of his own observations at Paris, where his opportunities were very great. His opinion upon this point is especially worthy of confidence, on account of his familiarity with the condition and appearance of the various classes of workmen to whom so much of his time was devoted.

The third question refers to the influence of tobacco upon the nervous system. On this point the replies are uniform and decided, and all agree that it produces no appreciable effect whatever upon the nervous system of those exposed to it. Independently of the necessary exposure to the dust and fumes, many of the labourers were in the habit of sleeping upon the piles of tobacco leaves, even when in a state of fermentation, without a single unpleasant result ever having been noticed. What becomes then of the assertions of authors, and particularly of M. Mérat that those men are especially subject to vertigo, headache, muscular trembling, and genuine narcotism?

In further proof of the innocence of this much vilified weed, it is stated that it is a very rare thing in any of the factories for individuals to be discharged on account of their being unable to attend to their duties through ill health.

In these factories, too, a great many persons are found who attain, and even considerably exceed the ordinary limit of human life, notwithstanding that they have been subjected for a great number of years, and frequently from early youth, to the influences in question. Thus in the factory at Havre, where three hundred and forty-eight persons were employed, one hundred and seven were over fifty years of age. The immense majority of these had been engaged in the business for upwards of twenty years, and fifty-two of them for upwards of seventy years. At Paris there are one hundred and fifty-two workmen, who are over sixty years of age, forty-four of whom are more than seventy years old, and five over eighty. Of these, thirty-six only had been engaged in the business for so short a period as ten years.

Numerous facts are brought forward to show that large manufactories of tobacco are in no way injurious to the neighbourhood in which they are located. So far indeed is this from being the case, that, in several instances, good effects have been attributed to them. Thus, at Bordeaux, where the climate is moist, the factory is said by the physician attached to it to be a real benefit to the city, and especially to those districts in its immediate neighbourhood. In proof of this he states among other things, that the part of the city in which it is situated and which is surrounded by marshes, used to be the frequent seat of contagious diseases, which have entirely disappeared since the establishment there has been in operation.

We have thus briefly stated the principal conclusions arrived at by Parent Duchatelet and D'Arcet, and also the most important of the facts upon which they are based. They are directly at variance with the views generally entertained in relation to the influence of the emanations from tobacco upon those engaged in its manufacture. This should not astonish us, however, when we recollect that previous to the inquiries instituted by these gentlemen, the subject had never been properly investigated. Knowing, as we do, the dangerous consequences sometimes resulting from the internal administration of tobacco, it might be very readily supposed that a constant exposure to its emanations should be prejudicial to health, and hence a few partial and perhaps exceptional facts tending to favour this view, might readily be regarded, without sufficient scrutiny, as the expression of a general truth. Be this as it may, however, the essay before us clearly shows that the deleterious effects of the article, under the circumstances mentioned, have been very much exaggerated. How far the opinion commonly entertained in relation to its influence upon the general health, when chewed, smoked, or snuffed, is correct, we must leave for others to determine. It seems, however, highly improbable that its effects should be more marked under

these circumstances, than where individuals are constantly exposed for years to the dense and penetrating effluvia, which arise from it during several of the processes which it undergoes, before it is finally prepared for use. Undoubtedly there may be certain individuals who may experience unpleasant consequences from its use as an article of luxury, and certain conditions of the system in which it would be decidedly injurious. This is no argument, however, in favour of its being generally prejudicial to health, for the same is equally true of many articles of diet which nevertheless agree perfectly well with most constitutions, as experience has proved.

T. S.

ART. XVII. *Medico-Chirurgical Transactions*, Published by the Royal Medical and Chirurgical Society of London. Volume the twenty-first. London, 1838: 8vo. pp. 450.

WE shall proceed, without any prefatory remarks, to present to our readers a brief analysis of the several articles comprised in the volume before us.

The first article is on NECROSIS: *being an experimental inquiry into the agency ascribed to the absorbents, in the removal of the sequestrum; with some observations concerning the adhesion of living to dead bone.* By GEORGE GULLIVER, Esq. The author confines himself, in the present paper, to the relation of some observations and experiments, instituted with a view to the examination of the question, whether dead bone admits of removal by absorption; reserving the consideration of the other means by which it may be discharged for a future occasion.

While engaged in the formation of the catalogue of the army medical department, at Chatham, in 1829, Mr. G. was led, from the examination of numerous specimens of necrosis in that collection, to entertain a suspicion that the doctrine of the absorption of dead bone, so confidently asserted in the schools as an ascertained fact, might, notwithstanding, be founded in error—and a further attention to the subject tended to confirm this persuasion.

“As far,” he remarks, “as I could judge from my own observations, it did not appear necessary to attribute the form and appearance of the dead bone to the agency of the absorbents after it had ceased to be a part of the living body, the facts appearing susceptible of explanation otherwise; while many cases presented phenomena altogether at variance with the received opinion. I soon learned that Mr. Liston and Mr. Syme, who possessed unusual opportunities for observation, had formed a similar view of the subject, while another great authority, Mr. Stanley, had arrived at a directly contrary conclusion: and Mr. Key, in a communication recently printed in the *Transactions* of this society, has minutely described the absorption of dead bone, in order to illustrate the process of ulceration in articular cartilage.”

But Mr. G. inquires, if the sequestrum is not absorbed, what becomes of it? To which query he replies as follows:

“It may be remarked, in the first place, that they are not all cases of necrosis that have been so denominated. Under this head, in the museums of anatomy, a class of specimens is sometimes presented to our notice which seem to me to admit of an explanation differing from that commonly assigned to them. These are generally the shafts of the long bones prodigiously thickened and irregularly perforated with holes for the transmission of blood vessels, or by cloacæ leading to the cavities of abscesses, and sometimes singularly crooked and misshapen, as if at one period of the disease they had been softened, and influenced by mechanical force. In the centre of such bones, a very small portion is sometimes found dead and detached, but more frequently the shaft is simply very thick and dense throughout. The former have frequently been regarded as examples in which the absorption is nearly effected, the latter as the completion of this process. It is probable that both are instances of long continued inflammation of bone, the first attended with death and separation of a small central fragment,

which had afterwards undergone no alteration of form, and that the second was never at any period a case of necrosis.

"The deposition of a cylinder of new bone around the old one, is not, Mr. G. remarks, an absolute proof of the death of the latter, as I have had frequent opportunities of ascertaining in the course of my experiments. Nature often exhibits a prospective contrivance in the formation of a new osseous shell, or in the enlargement of a part of the old shaft, before actual necrosis has taken place, a fact which has not escaped the observation of Mr. Russell and Dr. Macartney."

"In such instances, the part which has suffered the most intense inflammation may become partially eroded, and gradually removed by absorption, if it retains its vitality long enough, while a deposition of new osseous matter gradually supplies the loss, death of the old bone having formed no part of the phenomena. This is probably the explanation of many cases of alleged absorption of dead bone. But if a piece of bone, truly dead, be inclosed within a new osseous cylinder, then it is indeed a bad case of necrosis, which the patient will carry to the grave with him, unless relieved of the sequestrum otherwise than by absorption."

Mr. G. remarks that the worm-eaten appearance on the surface of many sequestra, may be explained in two ways :

"The most numerous examples of this kind, are those of necrosis of the inner layer of the shaft of the long bones, with thickening of the outer portion.—In such cases, irregular death, and separation of a portion of a bone, may be expected to produce an equally irregular surface; the part would not necessarily die in a determinate form, any more than in cases of sloughing of soft textures; and when the outer layer of an entire cylinder of necrosed bone presents erosions on its surface, it seems more reasonable to refer these to the effect of the ulcerative process, while the part retained its vitality, than to the action of the absorbents after its death."

The aspect and situation of the granulations is, according to Mr. G., an equally inconclusive evidence of the absorption of the sequestrum.

"They are seen to be extremely vascular, and accurately corresponding to the indentations on the under surface of a superficial layer of dead bone in progress of exfoliation, a case in which it has not often been supposed that the dead portion suffers diminution from the absorbents, the action of which is confined to the surface of the living bone in immediate contact with that about to be separated. The vascular structure adjusted to the superficial excavations on the surface of the sequestrum, is what might be expected from the work of exfoliation in some instances, or from the extension of the ossific process into the vacant spaces in others.

"I am not aware," Mr. G. remarks, "that the absorption of the fang of a transplanted tooth is a well authenticated fact; but if so, it would seem to indicate that the tooth, having preserved its vitality, had become a part of the living body, to which it was attached, and accordingly subject to its laws."

With regard to the diminution said to have taken place in portions of dead bone, kept in contact with the granulations of an ulcer, the statement is altogether at variance with the result of our author's experiments.

In support of the views advanced in the foregoing extracts, Mr. G. relates five cases of necrosed bone, in which it was found, at the termination of four months—of two, and even more years, that the sequestrum still remained, and without any indication whatever of the action upon it of the absorbents. The results of nineteen experiments are next presented, in which portions of bone were kept in contact with an ulcer for seventeen days—introduced into a seton at the back of a man's neck, and allowed to remain there twenty-nine, thirty-two, and sixty-five days—kept deeply imbedded for five weeks in the soft parts of a dog's leg—between the muscles and periosteum of a dog's leg for two months—in the subcutaneous cellular substance of a dog's leg for three and four months, without experiencing any alteration whatever.

The following experiments are of so interesting a character, that we copy the author's own account of them :

"**EXPERIMENT IX.** A piece of the metacarpal bone of a rabbit was introduced

into the medullary canal of the tibia of another rabbit, where it remained seven weeks. The wound readily healed, and the animal continued healthy and active until it was killed. The foreign bone, which I had not weighed previously to the experiment, had undergone no appreciable change; it was imbedded in a soft substance, which I have shown to be highly vascular by injection. The tibia was simply thickened."

"**EXPERIMENT X.** The fibula of a rabbit was introduced into the medullary canal of the tibia of another rabbit, where it was kept thirty-six days. I omitted to weigh the fibula. It had undergone no appreciable diminution, but a portion of new bone was adherent to its surface. The tibia was enlarged by osseous deposit, both on its outer and inner surfaces, and the foreign bone had become firmly locked in the centre of the new bone."

"**EXPERIMENT XI.** A portion of the shaft of a rabbit's tibia, weighing 2.1 grs., was put into the medullary canal of the tibia of another rabbit, and retained there thirty-four days. The foreign bone was found to have undergone no change; it was surrounded by highly vascular lymph, and there was a large cyst, which had not yet burst, containing a white, concrete, purulent matter, and communicating with the cavity of the tibia."

"**EXPERIMENT XII.** A piece of the shaft of a rabbit's tibia, weighing 1.5 grs., and a bit of the spongy extremity of the same bone, weighing one grain, were kept in the medullary cavity of another rabbit's tibia for twenty-five days. The weights were marked on these portions of bone with a black lead pencil. On being removed and dried, the first portion was found unchanged, and the second had increased one-tenth of a grain in weight, probably from matter which had not been dissipated in drying. The pencil marks were not obliterated. There was much inflammation of the limb, and pus, with vascular lymph, surrounded the adventitious portions of bone."

"**EXPERIMENT XV.** A bit of the shaft of a rabbit's tibia, weighing 2.2 grs. was introduced into the tube of another rabbit's tibia, and kept there seven weeks. The wound healed in the course of a few days. The adventitious bone weighed 2.37 grs., and it was firmly imbedded in the medullary canal. The increase of weight was accounted for by two well defined specks of new osseous matter deposited on its surface; and these deposits were removed and analysed by Dr. Davy, who found their composition to be that of true bone."

"**EXPERIMENT XVI.** A portion of the shaft of the human tibia was weighed, and introduced into the tube of a rabbit's tibia, seven weeks after which the animal was killed. The limb was macerated three months during the summer, when a part of the circumference of the tibia being removed to expose the foreign bone, it was found firmly adherent to the inner surface of the rabbit's tibia, and the union was effected by true osseous substance, as proved by the analysis of Dr. Davy."

"**EXPERIMENT XVII.** A portion of the human tibia was introduced into the tibia of a rabbit about half grown. The animal continued active and healthy, and grew to the adult size. It was killed fourteen weeks after the operation, when the foreign bone was found to be firmly agglutinated to the rabbit's tibia, by new osseous matter."

"The consolidation by osseous substances, of dead with living bone," Mr. G. remarks, "is a curious fact in the history of adhesion, which may tend to illustrate the nature of the union between the vascular and extra-vascular parts of animals, and to show that the opinion of Mr. Hunter concerning the vitality of transplanted parts, is not without exception. It appears to me to be a very interesting fact, that a tissue which has been long dead should possess the power of attracting, as it were, particles similar to itself from the blood. To complete the resemblance to assimilation, we have only to suppose the dead matter to be porous, and the new particles attracted to its interstices—and if new bone can be deposited by the neighbouring living textures on a dead substance, and become firmly adherent to it, as shown in the experiments 10, 15, 16 and 17, we may be permitted to doubt the conclusions of those physiologists who adopt the views of Haller and Dethlef concerning the reparation of injured bones, since the close

connection of the new to the surface of the old bone is no proof that the former was secreted by the vessels of the latter, however necessary in human subjects the presence of the old bone may be to the establishment and continuance of the ossific process."

The second article is a *Note on the comparative prevalence of Calculous Diseases, &c.* By A. COPLAND HUTCHINSON, F. R. S. L. & E. The chief object of this paper is the communication of a fact furnished to the writer by Sir William Burnett, Physician-General to the British Navy, confirmatory of his statements as to the extreme rarity of calculous diseases among seafaring people, contained in a former volume of these Transactions. Sir William having caused the returns of the naval hospitals, at home and abroad, to be carefully examined from April 1830 to the 26th November 1836, with reference to prevalence of calculous disorders, the only instance of the kind found recorded, is one case of renal calculi, in Malta hospital, in Michaelmas quarter, 1833; the patient was purser on board a sloop of war, and was discharged cured in the same quarter.

The average number of seamen and marines annually voted by Parliament, during the period above mentioned, *including two thousand boys*, has been thirty thousand.

Mr. Hutchinson remarks, that he has hitherto scrupulously forbore to offer any opinion on the treatment of calculous diseases, as the result of his extended statistical inquiry into the subject, but he considers it may not be out of place for him to state here, that pure air, a lax state of the bowels, iodine used internally, in proper doses, and externally over the region of the kidneys—the use of swings, active bodily exercises, warm clothing, such as flannel dresses worn next the skin, and a very sparing use of vegetables, seem to him to be the remedial and preventive measures indicated in such cases, from a careful review of the statements contained in this and his former papers, one or more, or all of these, according to circumstances, may be advantageous, where sea voyaging and a sea life are impracticable.

The third article is entitled *Observations on the Constitution of the Urine.* By JOHN BOSTOCK, M.D. It contains nothing more than the outlines of an intended series, of what may be styled statistical experiments on the urine, where the attention should be exclusively directed to a few well defined objects; the experiments to be all made precisely in the same mode, and consequently, admitting of direct comparison with each other. When a sufficient number of experiments shall have been performed on this plan, it is the writer's intention to arrange them in tables, so that each particular point may be at once brought into view in the different cases under examination, and referred to the circumstances under which they were performed. The circumstances which have been selected for experiments are the following:—external characters, including colour, odour, clearness, specific gravity, &c.; degree of acidity referred to a fixed standard; presence and amount of albumen; amount of residuum after evaporation; proportion of residuum soluble in alcohol; amount of saline contents; amount of calcareous salts; and spontaneous changes.

Subjoined to the article, as a specimen of the tabular form, in which Dr. B. proposes to arrange his results, is a synopsis of some experiments that have been performed on the urine selected as the standard, to which, in the first instance, the others are to be referred.

The fourth article is the *Description of a new instrument for closing Vesico-vaginal and Recto-vaginal fistulæ, and fissures in the soft palate.* Invented by WILLIAM BEAUMONT, Surgeon, &c.

This is an extremely simple, ingenious, and useful instrument; though our readers will scarcely understand its construction without a drawing. It is in the form of a forceps, one blade of which is a needle curved towards its point, close to which latter is the eye of the needle. The other blade is broad, or, on its opposing surface, less curved; and, at its extremity, has a perforation—through which the needle point, and just the loop of the ligature, are carried when the blades are closed. On the back of the broad blade is a spring, which, when

pushed forwards, the blades being previously closed, catches the loop of the ligature on its point, and holds it at the extremity of the blade.

"In using this instrument, the operator has only to seize in its points, as he would with a pair of forceps, the border of the fistulous opening; the blade should then be closed, and the ligature will be carried through one lip of the aperture. The opposite border is then in like manner to be seized, and the blade to be again closed and firmly held so. The spring on the back of the broad blade is now to be pushed forwards, by which the ligature will be caught and held at its point. The blades after this are to be opened and gently withdrawn, leaving a double ligature passed through opposite points of the fistulous aperture. A second or more stitches may in the same manner be made, leaving in each a double ligature, so that the quilled or other suture may afterwards be formed."

The fifth article comprises *Facts and Inferences relative to the condition of the Vital Organs and Viscera in general, as to their nutrition in certain Chronic Diseases*. By JOHN CLENDINNING, M.D. This is an extremely interesting paper—the object of the writer is to ascertain, what are the modifications impressed on the nutritive functions in the viscera in certain chronic diseases? For example, Does the defect of supply or excess of waste proceed in the same manner amongst the external and internal parts in phthisis? Does hypertrophy of the heart beget or indicate a general or partial tendency to hypertrophy? &c., &c.

The facts offered in reference to these questions consist principally of measurements by weight of nearly all the principal viscera in most cases, and of the person in many, of 249 subjects, of whose diseases and post mortem appearances Dr. C. is in possession of memoranda, taken, with a few exceptions, by himself. They are arranged in tabular form, as follows:

Table one contains, in separate columns, the weight of the encephalon, heart, liver, kidneys, spleen, and pancreas of each of 31 males, dead of various known diseases, not *phthisis* or *morbis cordis*, between 21 and 60 years of age.

Table two contains like particulars of 44 females, dead under like conditions as to disease and age.

Table three contains like particulars of 37 males, dead not of *phthisis* or *morbis cordis*, at ages above 60 years.

Table four contains the weights of the hearts of 33 females of various ages above 60, and dead of various diseases exclusive of *phthisis* and *morbis cordis*.

Table five includes particulars, arranged as above, of 27 males, dead of *phthisis*, between 21 and 60 years of age.

Table six gives like particulars of 16 females, dead under similar circumstances of age and disease.

Table seven contains particulars, tabulated as before, of each of 41 males, dead of *morbis cordis*, between 21 and 60 years of age.

Table eight contains for 20 females, dead of the same disease, and between 21 and 60, the like particulars.

We cannot spare room for the writer's very interesting comments upon the leading facts presented by these tables. We can only lay before our readers the general inferences which Dr. C. conceives might be deduced from those facts, if their accuracy and number were considered sufficient.

"1. The healthy adult male heart averages, for all ages under 60, nearly eight and a half ounces avordupois.

"*Note.* This estimate agrees pretty well with the estimates of Senac, viz.—8 to 10 oz.; Bouillaud, eight ounces and three grains average; Cruveilhier, 7 to 8 oz average; and Lobstein, 9 to 10 oz. average; considering that Senac and Lobstein made, as I recollect it, no distinctions as to age or sex; while Bouillaud included in his estimate several hearts of subjects under 21 years of age; and Cruveilhier included subjects of various ages above 16 or 18, and of both sexes.

"2. The healthy female adult heart averages nearly seven and a half ounces, or more exactly, seven and two-fifths ounces.

"3. In phthisical subjects, the heart in a large proportion of cases, (according to my observation) weighs considerably more than in health.

"4. The weight of the heart increases with years, up to the end of life, contrary to the law of nutrition of the viscera in general.

"5. Hypertrophy of the heart generally, or of the left ventricle alone, predisposes not only to visceral and general plethora and hypertrophy, but also to acute and chronic inflammations in general; and especially to bronchitis, pneumonia, and pleurisy; and the tendency it produces to disease of the bronchial ramifications in particular, and of the air vesicles, is such, that cases of long standing are usually, if not invariably, complicated with chronic catarrh and emphysema of the lungs.

"6. The average weight of the brain of the healthy adult male under 60 years of age is about 45.85 ounces; that of the healthy adult female under 60, about 41.25 ounces.

"*Note.* This is rather lower than the estimate of Dr. Sims, contained in his valuable paper in Vol. XIX. of the Transactions, which, for both sexes and all diseases, from 20 to 60 years of age, gives an average of about 45 ounces. But the estimate of Dr. Sims being founded on more than 100 observations of subjects between 20 and 60, is, in all probability, better entitled to confidence than mine, although taking no account of other difference than that of age.

"7. The weight, and consequently nutrition, of all the viscera exceed the normal standard in all cases of phthisis, in which the heart is increased in bulk or weight.

"8. In post mortem inspections, more especially of cases of diseased heart, but also in other cases of which hypertrophy of any viscus might be supposed an element or complication, it is advisable, in addition to manual and visual examination and linear measurement, to employ other means, such as weighing, to ascertain accurately the state of nutrition and density of the viscera, and perhaps of the person, in order to avoid the risk of overlooking important deviations from the normal condition, not otherwise so readily and surely to be detected."

The next article is entitled "*Remarks on Malignant Diseases of the Skin of the Face.* By CÆSAR HAWKINS." Mr. Hawkins restricts the term malignant to such diseases as essentially possess a new structure, capable of exciting a poisonous influence in one or more of these several modes: 1st. Upon the *neighbouring textures*, which are converted into a substance, either exactly similar, or at least analogous, to that of the new formation. 2dly. Upon the *absorbent system*, so that the nearest glands become enlarged into a tumour like that originally deposited; or, 3dly. Upon the *whole constitution*, so that the poisonous secretions of the newly formed part gain access to the circulating fluids, and tubercles of various forms, but of the same or analogous character, become developed in some distant organs or textures, which have no direct communication, except through the blood, with the parts in which the new structure was first formed. By this restriction of the term, we exclude, Mr. Hawkins's remarks, from among the malignant diseases of the face. 1st. The irritable and intractable ulcers of this part, so well described by Mr. Earle in Vol. XII of these Transactions. 2dly. The various forms of scrofulous phagedenic ulcer, or scrofulous lupus, which attack the nose, eyelids, and cheeks. 3dly. The several varieties of tubercular sebaceous disease, tubercular lupus, cancer perforans, noli me tangere; or whatever other name is adopted to designate these destructive ulcerations, which occur in the same parts; and, 4thly. The hypertrophy of the skin of the nose, described by Hey, Cruveilhier, and other writers, and often called cancerous tumours, loupes, lipoma, &c.; though they have nothing in common with these affections.

None of these are malignant in this confined sense; because the interior of the tumours, and the hard edges, and fungous granulations of the ulcers, contain no new structure, but are a development of the natural textures, with the deposits of inflammation only, incapable of affecting other parts of the body, even when fatal to the lives of the wretched objects who are victims to these frightful disorders.

The diseases of the face referred to by Mr. Hawkins under the denomination

malignant, are—1st. Fungoid malignant diseases, whether in their *hæmatoid*, *medullary*, or *melanoid* varieties; and, 2dly. Scirrhus or cancerous complaints.

The first class, he remarks, require little notice, since they seldom occur in the skin of the face, except when the constitutional taint has already evinced itself by the formation of a tumour in some other part of the body. The second class of diseases are very peculiar when met with in the face, and differ in many respects from what is usually called cancer.

Cancer of the skin of the face is presented to our notice, according to Mr. Hawkins, in three different forms, of which the most frequent may be called,

1. *The common cancer of the face*, with which, as it shows itself in the lower lip, most surgeons are familiar. When it occurs in other parts of the face it presents exactly the same characters: viz., the excavated ulcer, with its hard everted margins and fungous growth, together with the peculiar sallowness of the countenance so expressive of malignant disease.

“The experience of every surgeon demonstrates that, although the tumour, or the ulcer which succeeds it, may often be removed with success, yet that a return is frequently to be expected; and further, that no measure can safely be trusted, except complete excision; sometimes by the hare-lip operation, at other times by the removal of a semi-lunar portion of the edge of the lip, according to the situation, shape, and size of the disease; or occasionally by the Taliascotian method; and in the rest of the face, by some kind of operation adapted to the form and local circumstances of the part affected.”

2. The second form of cancer of the face is one which Mr. Hawkins has been accustomed for some years to describe under the name of the “cancerous ulcer,” or “phagedenic ulcer of the face of old persons.” The usual origin he believes to be a flat brownish tubercle, generally situated in the angle between the cheek and ala nasi, or in the inner canthus of the eye, frequently stationary for a long time before some accidental violence induces ulceration. This tubercle is softer, flatter, and darker than that of common cancer. The ulcer has a dark shining appearance; slightly elevated edges, which are jagged and irregular; the skin around is not thickened or inflamed as in ordinary cancer—from which it is also distinguished by the trifling degree of pain—absence of hæmorrhage, sloughing and fungus—and its very slow progress—many years sometimes elapsing before very extensive ravages have been committed by it. The ulcer sometimes remaining stationary for a time, or becoming covered by a thin skin, in which the vessels of the subjacent texture are visible. In these intervals of rest the new structure at the edges diminishes in thickness.

While the ulcer spreads gradually, laying bare, and causing a partial exfoliation and softening of the bones of the cheek, destroying the eyelids and circumference of the orbit, its difference from ordinary cancer is strikingly evinced by the little disturbance it causes in the general health, and by the entire absence of contamination, so far as Mr. Hawkins is aware, in the absorbent glands.

“It must be remembered that it is very difficult,” Mr. Hawkins remarks, “to destroy all the new structure of even this local disease by caustics; and also, that wherever vain and injudicious measures are adopted to *heal*, what in fact must be *removed*, the disease may be much aggravated, and made more like ordinary cancer in its progress. On the whole, it appears to me that the removal, by the knife, of the tumour or of the ulcer, is in general the safest method; but in a broad flat ulcer, without any depth of new structure, I prefer the employment of the chloride of zinc, as lately introduced into practice into this country by Mr. Ure, which I have frequently had recourse to without any of the injurious effects of other caustics.”

3. The third form of cancerous disease of the face may, according to Mr. Hawkins, be called the *Cancerous tumour or fungous cancer of the face of old persons*, of which he is not aware that any account has been published. In its early stage it has the appearance of a small round or oval tumour in the skin, generally over the malar bone, or on the ala nasi. It retains nearly the natural colour of the skin for a long time, or is a little whiter. A section of the tumour shows it to be white, solid, but not very firm—lardaceous in consistence rather

than of the firm hardness of ordinary cancer. It has a well defined margin, separate from the rest of the skin; and, where it projects below the cutis, it is covered by a kind of cyst.

“The tumour is more globular, soft, insulated, and distinct—more completely confined to the texture of the skin—more elevated and less liable to become puckered than ordinary cancer of the skin of the face, and less liable to have lancinating pain before the ulcerative stage has begun. It is more elevated and circular, and of a whiter colour—more abrupt at its margin, and extends deeper into the substance of the cutis than the tubercle of the cancerous ulcer.”

The tumour grows thus smooth, globular, and nearly unattended with pain to the size of a nut or walnut, when it is pricked or irritated, or ulcerates spontaneously, and there arises a mass of healthy granulations which spread out considerably beyond the tumour, to the height of an inch or more, with a copious discharge of healthy pus, without fœtor, sloughing, or bleeding and but little pain. At the base of the granulations, the tumour increases in depth and diameter, but free for a long time from any attachment, by altered cellular texture, to the subjacent parts, so as still to allow of removal with every chance of success. The tumour grows to a considerable size before it alters its character, and before the general health suffers much—after a time ulceration extends more deeply into the tumour—its projecting appearance is lost—the bones and deeper parts become rapidly changed into the new structure, which in some parts is gristly like scirrhus, but in others is softer and more pulpy, like some cases of medullary disease of the bones. The ulcer in this stage is somewhat intermediate in character between these two diseases.

“It appears to me,” remarks Mr. H., “that when the cancerous tumour of the face has reached its third stage of advanced ulceration, it bears more resemblance than it previously does to common cancer of the lips and face, but it is attended with more tumefaction around and beneath the ulcer—the edges are less curled and hardened—the discharge is healthy purulent secretion, instead of offensive, watery and sanæous fluid of a peculiar odour—and there is much less disposition to bleeding and sloughing. It is easily distinguished from phagedenic ulcer of the larger size, by its tumefaction and fungous growth, by its granulating and vascular surface, by the depth and extent to which the subjacent parts are excavated and converted into new structure, by the greater pain which accompanies it, and by the rapidity of its progress:—its final and fatal stage being attained in about two years instead of, perhaps, twenty or thirty.—The ulceration differs from that of fungus hæmatodes, as much as it does from that of common cancer, in having none of that rapid sloughing and bleeding, characteristic of tumours of that description.

“In malignancy it is intermediate between the cancerous ulcer and the common cancer, more rapidly and extensively contaminating the surrounding parts than the former, but not having the neighbouring scirrhus tubercles, and scirrhus bands of cellular texture, met with in the latter diseases, and admitting, therefore, of removal by the knife, if sufficient care be taken to excise the whole, with more chance of the cicatrix remaining sound, than in ordinary cancer—in fact, with almost a certainty of success, where it has not attained a great magnitude. With regard to the absorbent system, the last case (given in the paper before us,) would seem to show that the cancerous tumour does affect it, which is never the case in the cancerous ulcer of the face, yet the enlargement of the glands is, at all events, very rare, and we need entertain very little fear of a return of the disease in the glands, after the removal of the tumour. Finally, it would seem, from the tumour of the liver in the last case (detailed in the present paper,) that the whole constitution may be impregnated with the poison of this complaint, in which respect also the cancerous tumour is more malignant than the phagedenic ulcer, in which I do not know that such an occurrence has ever been observed.—If, however, the tumour of the fungous cancer is carefully removed by the knife, and not trifled with by caustics, and no gland is enlarged at the time of removal, the prospect of cancer becoming developed in some other

part of the body, though not impossible, is too remote to excite any apprehension of a failure of the operation from this cause."

The seventh article is on a *peculiar symptom occurring in some cases of enlarged liver*. By JOHN G. MALCOLM, sen. Surgeon in the Madras establishment. The peculiar symptom alluded to, was a loud sound, (as heard through the stethoscope,) between a crepitous rattle, and a bleating, audible to the patient and even to the bystander, and accompanied by a vibration of the parietes of the thorax, communicated to the hand applied to the part. Mr. M. was unable to ascertain the cause of the symptom until a case occurred to him of extensive disease of the liver, the history of which is given, but of which, instructive as it is, our limits will not permit us to present an outline. The case terminated fatally and a careful dissection of the body of the patient, left no doubt that the very peculiar symptom above referred to was caused by the thin edge of the lung being compressed against the costal pleura by the enlarged liver. The same symptom, Mr. M. remarks, occurs from simple enlargement of the liver, and a knowledge of it may be of use, both in relieving the mind of the sufferer and in directing the practice in certain obscure cases. In a case of chronic hepatitis, with enlargement and febrile paroxysms, which Mr. M. subsequently saw, the same peculiar symptom was present. By placing the patient in a sitting posture the symptom was made to disappear, the lung descending a little further into the chest—while, by pressing the liver forcibly upwards, it was again produced. The present paper contains some very judicious observations on the subject of hepatic abscesses and their proper management, which want of space obliges us to pass over without noticing.

Article eighth is on *Nervous Affections peculiar to Young Women, causing contraction of the muscles of the Extremities, accompanied by increase, diminution, or absence of sensation or motion*. By JOHN WILSON, M. D. The history of ten cases of these affections are presented. The patients were all young women, generally in good health, and of strong constitutions: all of them were single, and many of them subject to violent hysterical fits. In the four most obstinate cases, the functions of the uterus were regular, in others the bowels were confined, and in four of them obstinately. In the *first* case, a pain came on in the right groin—a fortnight after, the pain had extended thence to the hip and down the thigh to the inside of the knee, followed by inability to move the right leg, or sustain any weight on it, with pain also of the occiput, and one of the inguinal glands hard and painful, with difficulty and pain in making water. In the *second* case a month previous, the patient had been seized with pain in the left side and back, with inability to walk, when to these were added pain of the loins, groin and abdomen on the left side so severe as scarcely to allow the slightest touch, but the pain was greatest over the left hip joint, that in the knee only slight, lies on the right side with the left knee bent up. In the *third* case, after an attack of headache, cough, sore throat, pain in left side of chest and short breath, the patient found herself unable to walk without assistance; diminution of the voluntary power of inferior extremities continued till towards the last. In the *fourth* case the patient had suffered for about three months with constant pain in the inside of the loins, on the left side and over the pubic region—lies with the right heel and leg drawn up under the left thigh. In the *fifth* case the patient was attacked with giddiness and violent pain in all the limbs, followed by shivering fits, when she became insensible and knocked herself about; shortly after this paralysis of the inferior extremities came on. In the *sixth* case the patient, a robust girl, aged about twenty years, fell on the back of her head; a week from the accident, during the whole of which time she has had pain in the occiput, with frequent succussions of the whole body, was in a state of torpor, with confined bowels—catamenia regular. Head shaved, a sinapism applied to the back of the head, afterwards the occiput was cupped to twelve ounces and fomented, and iodine ointment applied; hydr. cum. creta gr. v. ter. d. with opening medicine. Ten days after this, she suffered severe and constant pain, with tumefaction about the occiput, occasional shivering and indistinct vision, kept her eyes closed, felt soreness on being touched over all the body,

with pain in the epigastrium, to which twelve leeches were applied with relief; the severe pain subsequently extended from the occiput over the whole head, so that she could not bear the ointment to be applied; about eight days afterwards had a fit followed by a state of stupor. At the termination of a month from the date of her fall, vision continued indistinct, pain confined to the right side of the head, and same side of the body; touching the hair caused soreness of scalp—she evinced great sensibility to the slightest touch over the affected half of the body, the power of motion of which was diminished; buzzing noise in the right ear; appetite good. The right knee was kept bent; directed it to be stretched by inclined screw plane; shower bath every morning; carbonate of iron one and a half drachms, three times a day; two needles introduced for two hours every day; bowels are sometimes so costive that extr. elaterium was given; moxa occasionally applied. At the termination of another month she had lost entirely all sensation and motion of right arm; two needles passed into the arm; the patient evincing no sensation when they were introduced or withdrawn; in the morning, a few days after, she felt a severe pain in the right shoulder, followed by a sense of numbness extending thence to the finger nails; in the evening was able to bend the fingers but not the arm; head comparatively well, intelligence continues perfect; the right knee continues bent, and very sensitive to the touch. Some days afterwards she had another fit, during which the right knee became straight, but became again bent when the fit went off—in some of the fits the knee could be placed in any position, as if nothing was the matter with it. She continued for some time longer to have severe fits, struggling, moaning, and screaming by turns; the respiration after them sometimes as high as ninety-six. The most powerful remedy in the fits was the cold douche. When this patient was improving, she was made to stand for half an hour every day on the right leg, with her back to the wall and a bedstead pressed against the bent knee to keep it straight, the left leg being raised on a chair; the cold douche was applied in the bath every morning to the bent knee, and sometimes the shower bath, afterwards, to the whole body, after which she was made to walk with assistance, and sometimes when she raised the right foot to bring it forwards, a kick was given to the heel, and thus it went much more forward than she intended or thought possible.—Towards evening, when tired and unable to walk more, she was seated upon a table, and a weight being tied to the right foot, she swung the leg back and forwards, thus giving motion to the stiff joint; in somewhat more than two months from this period she was entirely well. In the *seventh* case the patient complained of pain and inability to move the right hip joint, confining her to her bed for near three months; at the end of which time had pains down the dorsal and lumbar vertebræ on pressure; great pain in the right hip and knee, much aggravated by the slightest percussion on the heel; right leg an inch longer than the left; a tumour in the right hypochondriac region. Subject to attacks of a cataleptic character. In the *eighth* case the patient was attacked with shivering and violent pains from head to foot, which came on after exposure to wet and cold—subsequently complained of headache, and pain and swelling of the right knee, which is generally the most severe from eight to ten in the evening. For more than two years had been able only once, for a short time, to set her foot on the ground—for three months previous to her last admission was unable to relax the ham strings, both of which remained tense and hard, with much swelling of the right knee, and the sole of the foot turned upwards towards the face; extensive tenderness along the spine. In the *ninth* case the patient had been ill three months with headache, lassitude, shortness of breath on going up stairs, and palpitations; the left knee had been constantly bent for a fortnight, but after that she was able to straighten it; nevertheless the left leg remained one inch shorter than the right. Complained most of pain in the left hip joint, which had previously extended down to the inside of the knee and ankle; could bear no weight on the hip; confined to bed; tenderness over the lumbar vertebræ. In the *tenth* case the patient fell on the left knee; for a month afterwards was able to walk alone, but with much pain in the knee; she then went into a public institution where she remained six months without benefit; nine months from re-

ceipt of injury walked on crutches, had only slight swelling of the knee, which was stiff and painful on attempts to move the joint; she became otherwise stout and healthy.

Some of the patients were at times seized with sudden and apparently alarming symptoms, as repeated hæmorrhage, most violent convulsive fits; others, on the contrary, had perfect paralysis of both sensation and motion; another lay motionless and speechless for three days. The patients often attributed the cause of their lameness to some accident, as a fall, knock or sprain, about the time the lameness was first noticed; frequently, however, the lameness occurs without any external injury to the parts affected.

The treatment pursued in these cases was acupuncture of the affected limbs; the application of moxas; cupping, purgatives, carbonate and tartrate of iron, cold shower bath, douches, motion of the affected limb, &c.

Seven of the foregoing patients were entirely cured and in the remaining three the use of their limbs was so far restored as to enable them to move about with only a *slight degree* of lameness.

The next article is a *Report of a case of Secondary Measles, with observations* by JOSEPH MOORE, M. D. We find nothing in this case or in the remarks appended to it of a very interesting character; the patient, a female infant twenty-two months old, was attacked by measles about the 24th of May 1836, and by the 10th of June the disease had entirely disappeared; other children of the family, six in number, were attacked with the disease in succession, and on the 31st of July, the first patient had a second attack of measles which ran through all its stages by the 9th of August. Although many medical writers of great eminence and experience deny the fact of the recurrence of measles in the same individual, yet others of equal eminence declare it to be a circumstance of no uncommon occurrence, which accords with our own experience. We have repeatedly seen a second attack of measles in the same person, although in no instance at so short an interval as in the case detailed in the paper before us.

The tenth paper is on the *removal of the clavicle, with a tumour situated in that bone*. By BENJAMIN TRAVERS, F. R. S. &c. The patient, a native of the East Indies, ten years of age, in the summer of 1836, fell whilst at play out of a wheelbarrow, and complained at the moment of having hurt his shoulder; ten days afterwards the maid, in washing him, discovered a swelling of the size of a hedge nut; a surgeon called in at the time considered this to be the result of inflammation and effusion under the periosteum and ordered leeches and cold lotions and afterwards applied a stellate bandage. Two months after the discovery of the tumour Mr. T. saw the patient; it was then oval shaped, about the size of a pigeon's egg, firm but elastic, and painful only when compressed. The motions of the arm were quite unimpeded. It gave him the idea of a cyst enclosing the broken and united portions of the bone. The tumour increased slowly, retaining the character of a dense walled cyst—local applications were of no avail. After some months the skin became slightly coloured from distension, and on pressure was more painful. Mr. T. introduced a grooved needle at the most elevated part of the tumour, and moved the point of it in a small cavity, an inch or more in depth from the surface; a few drops of grumous blood were discharged. At the end of six months the principal changes were the more advanced and somewhat undulating outline of the surface, and the more extended and fixed base of the tumour, "which could not be traced beyond an oblique line of discontinuity of the clavicle, distinctly perceived on the sternal side; at the scapular end the bone was absorbed in the tumour." In May 1837, the base of the tumour from its scapular extremity occupied three-fourths of the bone; about two-thirds of its circumference was supra clavicular, so that, in the erect position of the body, it was seen by a person standing behind the patient "over the fall of the trapezius." The skin had a purple hue from congestion of the superficial veins; but there was no sign of pressure on the blood-vessels or nerves of the arm. In consultation with Sir A. Cooper and Sir Benj. Brodie, it was decided to remove the clavicle and tumour connected with it, and assisted by the last gentlemen Mr. T. performed the operation on the 6th of June 1837.

"The little patient being recumbent, with his shoulders raised and head

slightly averted, a crucial incision was made through the integuments and *platysma myoides*, one limb of which was nearly in the line of the clavicle, and the other at right angles; and the flaps and fascial coverings successively dissected down to the external basis of the tumour. The pectoralis and deltoid muscles were then carefully detached from their clavicular origin, avoiding the cephalic vein, and the fibres of the trapezius and cleido-mastoid muscles were divided on a director; one considerable vessel, in the situation of the *transversalis humeri*, required a prompt ligature. The circumference of the tumour was now well defined, though it was found to be firmly imbedded, and adherent in its posterior aspect. Disarticulation of the scapular extremity of the bone was next effected without difficulty, and the mobility thus communicated to the mass facilitated the completion of the operation. A director was now worked beneath the bone, as near to the sternal articulation as was practicable, and with a pair of strong bone nippers thus introduced, it was completely and clearly divided. The sub-clavius muscle and a part of the rhomboid ligament were now detached from the tumour, and the mass being well raised by an assistant, while the edges of the wound were kept wide apart by metallic retractors, the cervical prolongations of the tumour were separated from their remaining connections by a few touches of the scalpel, without injury to the subclavian vessels."

In little more than a month the wound was entirely healed. The patient has remained since in perfect health, and it is worthy of observation, Mr. T. remarks, that there is scarcely any perceptible falling forward of the shoulder, nor any restriction of the motions of the arm; he elevates it perpendicularly over his head, extends it horizontally, carries and rotates it behind the trunk, and performs the same extent and variety of circumduction, and with equal promptitude and power as the parallel movements of the other arm. Indeed one of his amusements is rowing a boat on the Thames. The production of bone of a cylindrical figure from the truncated sternal extremity of the clavicle extends at least two inches, and terminates beneath the centre of the cicatrix in a firm ligamentous band adherent to the skin.

"The tumour presented on its anterior aspect a regular curvilinear surface; posteriorly it was irregular, dipping in prolongations between the interstices of the cervical muscles, to which it was firmly fastened. A very dense fibrous expansion invested it on all sides, and from a puncture of the principal cyst in the operation, the same dark grumous fluid exuded as followed that made by the needle three months before. The section of the tumour in its longest diameter presented an arrangement of cells or chambers, of pretty equal dimensions, filled with dark solid coagula of blood, the edge of the scalpel grating as it passed upon particles of osseous matter. One larger compartment, deeply situated, was without a clot, having been filled with the dark fluid blood before mentioned. The investing membrane was evidently the condensed periosteum, the cells were irregularly expanded cancelli, and the calcareous particles were the debris of the bony plates and walls."

Article the eleventh is *a case of universal purulent deposition into the joints with separation of the epiphyses; occurring as a sequel to small pox.* By HENRY ANCELL, Esq. The patient, a female child eleven months old, was attacked with small pox and about three days after the separation of the crusts, she evinced violent pain on the slightest motion, and swellings were observed over the clavicle and upon the joints of the elbows, wrists and knees. Three days subsequently she was seen by Mr. A. She was then emaciated and deadly pale; presenting large, pale, cold, more or less circumscribed fluctuating swellings, streaked with blue veins, around the elbow, wrist, and knee joints, on the inside of the left ankle, and over the scapular articulation of the right clavicle.

"The swelling on one wrist was larger than an ordinary sized hen's egg, and on pressing the finger towards its centre, it appeared to contain a hard foreign body with an abrupt edge. Very distinct crepitation was observable in various situations in all the affected joints. The knees presented to the hand a sensation exactly as if the bones had been crushed under some considerable weight. A distinct grinding of two surfaces of bone could be produced about an inch

below the head of the left tibia. Crepitation was also felt at the articulation of the ribs with the vertebræ. The deposition into the joints continued to increase for ten days; the smaller joints of the carpus, metacarpus, and phalanges became involved in the disease, and the ends of the bones appeared to separate more and more from each other. An abrupt edge of bone was perceptible through the skin, one-third the distance from the condyles towards the head of the right os humeri. Strabismus and other cerebral symptoms supervened, and in a few days afterwards the child died.

"On dissecting the left knee, a considerable quantity of fat was found under the cutis, and the muscles of the thigh and leg were pale, small and flabby; on opening the capsular ligament, the parts within were found to be surrounded by thin pus to the amount of about three ounces, the purulent fluid extending a third the length of the femur upwards and a considerable distance down the tibia; the body of the femur was separated from its epiphysis; the osseous portion of the epiphysis was quite separated from the cartilaginous portion, and a large portion of the surface of the latter presented a dull and slightly granulated appearance, as if worm eaten; the cartilages and ligaments of the joint were undistinguishable. The head of the tibia presented similar phenomena, being distinctly separated from the body of the bone by a stratum of pus. There was no appearance of morbid vascularity either in the bones or in the capsular ligament. On opening the calvarium, about six ounces of limpid fluid escaped from between the membranes of the brain, and a small quantity was found within the ventricles. The brain and its membranes were free from morbid vascularity. The remaining viscera and joints were not examined, in consequence of strong objections urged by the mother."

The next article is a report of twenty cases of malignant Cholera that occurred in the Seamen's hospital ship, *Dreadnought*, (off Greenwich,) between the eighth and twenty-eighth of October, 1837. By GEORGE BUDD, M. D. and GEORGE BUSH, Esq. The only part of this report we shall have space to notice is the account of the post mortem appearance in eleven cases. The only circumstances in the *external condition* of the bodies were rigidity and a violet colour of the back—the rigidity being generally greater, and the intensity of the violet colour less, as the bodies were examined nearer the epoch of death. In the cases most rapidly fatal, or during the stage of collapse, the peritoneal surface of the stomach and small intestines were viscid and of a pale rose colour. The viscidty became less remarkable or disappeared and the peritoneum had its ordinary gray tint in cases that proved fatal after decided reaction. The large intestines were gray externally in every case; mucous membrane of œsophagus vascular in its lower portion in one case, in all the others pale and healthy; studded with enlarged flat mucous follicles in its lower third in one case; presenting a slight enlargement of the follicles in its upper part in one case. The *stomach* generally large; its mucous membrane pale in three cases; in the others presenting more or less redness, evidently caused by the injection of very minute vessels in its free surface, in either the splenic or pyloric extremities or both. Its consistency presented no remarkable change excepting in four cases, in which it appeared to be somewhat softened in the splenic extremity. In most cases it was more or less mammellated generally or only at the pyloric extremity. In two cases when the coats of the stomach were drawn between the finger and thumb using some pressure, a milky fluid exuded, and the mammellated appearance destroyed; the mucous membrane afterwards appearing smooth and of normal thickness and consistence. In one case the mammellated appearance could not be destroyed nor any fluid expressed; the mucous membrane being coated with very viscid firmly adherent mucus; this latter was not the case in two of the stomachs. The contents of the stomach were similar to those evacuated during life; in one case there were some adherent patches of mucus in which calomel was entangled, in another a few ounces of thick gray mucus were adherent, in a third a universal coating of viscid, adherent mucus, in portions of which calomel was entangled. In three cases condition of duodenum not noted; in two its mucous membrane vascular; in two pale; in three grayish, caused by

minute black specks at the apices of the villi. The only thing noted in regard to its texture was a greater friability in some cases. In every case solitary glands were very conspicuous, causing more or less of a granular aspect; these were more numerous near the pylorus and never extended into the jejunum. In one case the villi of a white colour were remarkably distinct, and on pressure between the fingers yielded a milky fluid. In two cases the orifice of the biliary duct unusually prominent; mucous membrane of small intestines in three cases pale throughout; generally it was increased in vascularity, giving rise, in some cases to patches here and there of a purple colour, especially near the termination of the ileum. Gray from minute black specks in three cases; grayness general in two cases, in which during life the discharges contained brownish or black flocculi, confined to jejunum and upper part of ileum in one case. Mucous membrane generally softened in lower portion of ilium, with seven or eight small ulcerations in one case; (the patient during life was affected with a typhoid affection.) In the other cases no appreciable change in the texture of the intestinal mucous membrane.

“The glands of Peyer were remarkably developed in all the cases, and the most so generally in those that proved fatal rapidly, or during the stage of collapse. They were of the same colour as the surrounding membrane, but in two cases, in which this colour was red, the tint of the patches was observed to be deeper. When pale they were in all cases dotted with black points. The glands of Brunner were observed, in every case, in the lower portion of the ilium, as small elevated beads, of the same colour as the membrane. These as well as the glands of Peyer, were the most developed in the cases that proved rapidly fatal, and in all these sufficiently so to give a sensation of roughness to the finger passing over the membrane.”

Contents of small intestines not tinged with bile in any case that proved fatal within thirty-six hours, but more or less so with one exception, in all the more protracted cases. The tinge was confined to the jejunum in two cases, to the ilium in one. They were brownish in the jejunum in two cases; of a plum colour, evidently from admixture of blood, in the ilium, in one case. In most cases the mucous membrane was more or less coated by a pasty substance.

Mucous membrane of large intestine, in most cases, pale throughout; reddened from vascularity in three of the protracted cases only. The redness confined to the first portion of intestine in two cases, general in one case, but more intense in patches, on the surface of which were streaks of effused blood. Conspicuous follicles were observed in the large intestine in all but one case. The follicles occurred as flat, slightly elevated circles, about a line in diameter, with a central black speck, and in every case diminished in number; and were less conspicuous as we receded from the cœcum. In the cœcum, one small ulcer in one case; and, in another, more in the transverse and ascending colon: none were larger than the surface of a split pea—most of them much smaller—with smooth edges, and apparently in process of cicatrization. In the first case, the patient had been the subject of a typhoid affection; and, in the second, of dysentery. The cœcum and ascending colon generally distended; descending colon, in several cases, contracted; mesenteric glands enlarged in almost every case; in some purplish; in others pale.

The liver presented nothing remarkable. Gall-bladder distended with black bile in all but one case, in which it contained pus; and presented numerous ulcerations of its mucous membrane.

Spleen of natural size, or under, and firm in seven cases; of a light red colour in four cases; its colour not noticed in three cases; unusually large in three cases: soft and dark coloured in one; soft and containing a purple creamy fluid, which could be expressed; having a white spongy substance in another; and, in a third, firm and dark coloured.

Lungs healthy, or simply congested, in four of five cases that proved fatal within 36 hours; pneumonia was present in six cases, in which the patients lived at least 45 hours after the attack; in two cases, fatal at the end of 96 and 138 hours respectively, the lower lobes of *both* lungs were in a state of red hepa-

tisation. In all these cases the pneumonia was unsuspected during the patients' lives. There was no recent affection of the pleura in any case.

A small quantity of serum in the pericardium in two cases the most rapidly fatal. Muscular substance of the heart generally flabby and purplish; in two protracted cases it presented ecchymosed spots on its surface. Fibrinous clots in the left ventricle in two cases, and these protracted; in the right ventricle, in seven cases. In one the clot was firmer, and in another larger in the right than in the left. In all the other cases the cavities of the heart contained a greater or less quantity of dark fluid, or grumous blood, communicating no stain to the lining membrane.

Kidneys in no case presented anything unusual in size or texture. In most their cortical substance was purplish throughout, or pale, with dark congested vessels in most of the cases. In all but one, a white puriform fluid could be expressed from the mammillary point. Urinary bladder empty and contracted in all who died during the stage of collapse; in some of the others it contained a small quantity of urine.

Head examined in six cases: in two, presented nothing remarkable; in two, vessels of dura mater and hemispheres congested; cortical substance unusually dark. In one case, surface of brain viscid; in another, considerable serous effusion under the arachnoid, and in sheath of spinal chord. In one case no vascularity of dura mater; surface of brain exsanguineous; cortical substance not darker than natural; on inferior surface of left anterior lobe, two slight depressions—the largest of the area of a sixpence—both coated by a yellow transparent substance, and apparently the result of old sanguineous effusions.

Article thirteenth, *On Aneurisms of the Heart*, with cases. By JOHN THURNAM. Of this paper, which occupies 79 pages, we shall be unable to present to our readers an analysis. The leading remarks of the writer, and the cases, eleven in number, by which these are illustrated, are presented in so condensed a form as render it scarcely possible to do justice to him, or convey to our readers any adequate idea of the important facts and deductions the paper comprises within the limited space to which we are confined. The paper is one of those which, to understand properly, it is necessary to read entire. We shall merely remark that by the term *aneurism*, Mr. T. understands an abnormal dilatation of a portion of the vascular system of *red blood*, either dependent upon or necessarily connected with a morbid change in the tissues forming the walls of the dilated part; which definition will exclude of course not only all forms of dilatation of the right cavities of the heart, and of the pulmonary artery, but also all *general* dilatations of the left cavities of the heart; different forms of which, either combined or uncombined with hypertrophy, have since the days of Baillou and Lancisi been generally known under the name of aneurism. When dilatation of the cavities of the heart is accompanied by hypertrophy, Mr. T. considers that the enlargement must frequently be regarded as altogether physiological; or as a change which enables the heart to overcome, at all events for a time, various obstacles in the course of the circulation. Simple dilatation of the heart appears to him to be a change in virtue of which that organ accommodates itself to the reception of an increased quantity of the circulating fluid; and as analogous not to the aneurismal dilatation of the arteries, but to that physiological, spontaneous, and uniform enlargement of which they are not unfrequently the seat; as may be seen in the arteries of the uterus during gestation, in those supplying parts which are the seat of hypertrophy or of tumours; and especially in the anastomosing branches of arteries, by means of which a collateral circulation is established after the main artery of an extremity has been tied, or even when the aorta itself has, from disease, been nearly obliterated. When, Mr. T. remarks, it shall have been further shown that almost every form of aneurism which has been met with in the arteries is occasionally found in the heart itself, he thinks we shall be fully justified in concluding that simple dilatation ought to be considered as a lesion distinct from aneurism, and as having other analogies.

This paper is certainly one of uncommon interest—presenting a general view

of the particulars connected with all the cases of aneurism of the heart upon record.

The fourteenth article is Dr. R. Lee's *History of a Female with four Mammas and Nipples*, already noticed in our Quarterly Periscope for May last. (Vol. XXII., page 172.)

The next article is *Results of Poisoning by Sulphuric Acid*. By JOHN WILSON, M.D. The first case detailed is that of a woman who died 45 weeks after having swallowed a part of two-pennies worth of oil of vitriol. The first part of the case was read to the college of physicians in July, 1834; when a cylindrical tube, about eight or nine inches in length, ejected by the patient during a violent fit of coughing, was laid upon the table. At that time the patient had survived the injury six months; had gained some flesh; and soon afterwards went out of the hospital very much recovered—suffering, however, much at the approach of and during cold, wet, and windy weather. At intervals her expectoration was very copious. When her difficulty of swallowing was greatest, had a pain extending from the pit of the stomach to the shoulders—diet, generally soft eggs, milk, strong beef tea, ale, porter, &c. She was readmitted September, 1834, more reduced than when she left; but, in a short time, improved much in looks, strength, and spirits, with some increase of flesh—same diet as above. She derived the most relief from peppermint. On the morning of the 14th of November had a shivering fit, preceded by vomiting, and followed by continued ineffective retching. At times dyspnœa, with great distress and constant pain about the stomach and lower ribs of right side; bathed in constant sweats; countenance greatly altered. During the day had exquisite suffering over entire surface of body. The wrists and other large joints painful and swollen, but not red. For two nights delirious, recognizing no one. She died tranquilly on the 17th, nothing having been received into the stomach since the 14th.

Examination 18 hours after death.—Body extremely emaciated; lower two-thirds of the œsophagus thickened and narrowed; internally very vascular, irregular and softened; the upper third shining like an old cicatrix. In the stomach, opposite the spleen, an opening of the size of a half crown piece, with softened edges; great softening of the mucous coat; the abdomen contained a quantity of dark coloured fluid, but no peritoneal inflammation.

The second case is that of a young woman, who, at 12 o'clock, P.M., of January 2, 1836, took from two to three ounces of strong sulphuric acid, which remained in the stomach for 15 minutes; when she vomited a black ropy fluid. On admission into the hospital next morning, patient could speak only in a whisper, and was scarcely able to open her mouth—from which exuded a ropy mucus. Great tenderness from the pharynx to the epigastrium; pulse scarcely perceptible; extremities cold; all fluids ejected as soon as taken; frequent vomiting of a fluid of the consistency of treacle and the colour of carbonate of iron; disposition to dose; no convulsions nor stool. Died at 12 o'clock the same night.

Examination 14 hours after death. Lining membrane of mouth, pharynx, and œsophagus of a silver gray speckled appearance, from some of the carbonised matter adhering to the deeper parts of the rugæ; membrane of the tongue easily peeled off; stomach very much distended—containing only air; when opened, its mucous coat no where visible, from its entire surface being covered with a pitch-like substance, which did not wash off with ease; when scraped off, mucous coat appeared of a pink colour, much swollen, but entire. At the commencement of the duodenum was a similar coating; which became less marked, and nearly disappeared at the beginning of the jejunum, when the mucous coat gradually assumed a grayish appearance, somewhat like that in the œsophagus, but of a duller colour, all of which seemed to terminate with the ilium. The peritoneal coat of the small intestines, and particularly of the stomach, were much inflamed, but without albuminous deposits.

Article sixteenth is *On the use of Arsenic in some of the affections of the Uterus*. By HENRY HUNT, Esq. Several cases are detailed in which the remedial effects of arsenic in affections of the uterus were strikingly evinced. The first case is

that of a female, 40 years old, labouring under cancer of the uterus in a state of ulceration, accompanied with a profuse foetid discharge, and great suffering. The liquor arsenicalis was prescribed in doses of four drops, gradually increasing to ten, three times a day; in about two weeks the well known poisonous effects of the remedy presented themselves, and in the same proportion the pain in the womb subsided. The second case is of a female, 42 years old, affected with profuse menstruation; continuing eight or ten days uninterruptedly, and returning at the end of a fortnight, or even sooner; the menstrual periods being preceded and accompanied with irritable bowels. She took the liquor arsenicalis in doses of four drops three times a day, commencing immediately after being unwell; and continued to resort to it for three or four months, commencing about a week previous to the menstrual period; menstruation became then regular and the patient stronger. The third case is of a female, 34 years old, labouring under too frequent and profuse menstruation and leucorrhœa; bowels much relaxed; tongue red and shining; harrassed by a troublesome cough, with much expectoration; greatly emaciated. A pill containing the twentieth of a grain of arsenious acid was given her three times a day; after continuing its use about three months, she became regular in her menstruation; regained her usual strength and flesh, and nearly lost her cough. The fourth case is of a female, 42 years of age, affected with profuse and too frequent menstruation; she took arsenious acid as in the last case; menstruation was rendered regular. The fifth case is that of a female, 17 years old, affected with profuse and almost constant hæmorrhage from the uterus. She took the arsenic as in the last two cases; and continued it for six weeks; when she was entirely cured. The sixth case is that of a female, 36 years old, labouring under profuse, long continued, and quickly recurring uterine hæmorrhage; took the arsenic as above—speedily cured. The seventh case is that of a female, 17 years of age, affected with too frequent and profuse menstruation; took three drops liquid arsenicalis, three times a day; cured at the end of three months.

“From the immediate and progressive improvement,” remarks Mr. H., “which succeeded the administration of the arsenic, the cessation of the menorrhagia may be fairly attributed to the action of that medicine; and its peculiar power is more clearly shown in the first three cases; for, in two, the disorder had previously resisted every remedy that had been given under the direction of very skilful physicians; and in the third, the immoderate discharge was arrested while taking the arsenic the first time, but returned soon after it had been left off, and was again immediately and permanently checked by resuming it.”

Mr. H. likewise tried the effects of the arsenic in a case of pain and bearing down about the region of the uterus, increased in the erect posture; in a case of intense neuralgia of the face, recurring at the menstrual period; and in a case of protracted menstruation, attended with erratic pains in the loins, head, chest, or sternum; and with the most happy results.

“As it is frequently desirable,” Mr. H. observes, “to continue the use of the remedy for a considerable time, and as large doses taken for a short time produce much distress, without the desired effect in the uterus, the form in which it is most easily borne by the stomach should be selected; and I have observed that when it is given in pills, containing one-twentieth of a grain, it has produced less inconvenience than the common preparation of the liquid arsenicalis. I have, therefore, generally chosen that mode of giving it; and my patients have seldom complained of any unpleasant feelings from it; although, in some instances, it has been taken for many months in succession.”

The 17th article is a *Case of Excision of the entire Lower Jaw; with observations.* By JOHN G. PERRY.—The patient, a female, according to her own account, was attacked in her 14th year with severe pain of the right side of the face, affecting all the teeth on that side, and depriving her of rest and the power of mastication. The pain shortly afterwards extended to the other side without swelling or redness. In the course of a few months the lower part of the face increased in size, the pain and inability to masticate diminishing in proportion as the swell-

ing advanced. For several years the patient continued her occupation as a household servant, until a fresh accession of pain, attended with inflammation, occurred, which she ascribed to cold. The enlargement of the face was now red, painful, acutely sensible to the slightest pressure, and throbbed severely. Matter at length formed, and discharged itself at many apertures, partially relieving the patient's sufferings. In this condition she continued for many months, when in her 20th year she came under the care of Mr. P.

"The case then presented the appearance of necroses in the advanced stage; there were several sinuses opening around the chin, discharging tolerably healthy pus; the dead bone was evidently encased in a deposit of recent formation, which, at that time, there was no ground for supposing to be dead also."

No change taking place, after a time the condition of the bone was explored by enlarging the aperture of one of the sinuses, when it was found that the entire case of *new bone* was dead, and separated in a great measure from the periosteum, which was manifestly diseased. The removal of the bone was then decided upon—and that no larger wound might be inflicted than was absolutely necessary, it was resolved to divide the bone into three portions.

An incision was made along the basis of the jaw from a short distance in front of the right masseter muscle, to the corresponding point on the left side, in order to avoid the facial arteries, and to include the orifices of two of the principal sinuses. The bone thus exposed was divided, by a saw and cutting forceps, as near as possible to the angles of the wound, and the insulated portion being removed, the wound was slightly dressed on the next day; the portion remaining on the right side, which had somewhat descended from the loss of the support of the central part, was removed without difficulty. After an interval of three weeks the remaining segment, which adhered rather more firmly, was, by careful manipulation, removed, without materially enlarging the wound. Little hæmorrhage followed these several operations—in each great care was taken to avoid cutting through the lining membrane of the mouth; and the teeth, where practicable, were left in the gum, in hope that when consolidation took place, they might be found useful. The wound healed without difficulty and the patient was discharged in a few weeks to follow her employment.

After the lapse of some months she was able to masticate solid food, by rubbing it with her tongue against the upper teeth; but as there was no reproduction of bone, the lower teeth were almost useless, although firmly retained in their situation by some solid structure of new production—the contraction resulting from the healing of the wound, reducing the arch formed by the lower teeth so much in extent, that it no longer corresponded with that of the upper.

The face is less deformed than might have been anticipated; and the deformity seems to be diminished by the depression of the chin, attributable, perhaps, to continual action of the mylo-hyoideus, genio-hyoideus, and other muscles of the larynx.

Article 18th—*On increased thickness of the Parietes of one of the Ventricles of the heart; with diminution of its cavity.* By GEO. BUDD, M. B. F. R. S., &c.—The object of this paper is, by the relation of some cases of concentric hypertrophy of the heart that fell under Mr. B.'s notice, and by a review of those recorded by others, to ascertain whether it must be considered a disease, or whether we must conclude with Cruveilhier, that it is merely a passing condition of the ventricle. Eight cases are related from the writer's own observations, in which the appearances of concentric hypertrophy existed without complication of any considerable disease of the valves; in one only was any irregularity of the pulse noticed; in none was there dropsy; and in only one was there any dilatation of the right cavities. From which he infers that the affection of the heart, in these cases, offered no considerable obstacle to the circulation throughout; there being generally intermittence or irregularity of the pulse, and almost invariably dilatation of the right cavities and dropsy, whenever such obstacle does exist. We must conclude, therefore, he thinks, that in these cases, there was not really a contraction of the cavity during life; but to use the terms of Cruveilhier, that they were hearts, more or less hypertrophied, which death surprised in a state of

contraction; and this conclusion, he remarks, becomes imperative, when we consider that, in the first case, the ventricle became relaxed to its ordinary capacity after the heart had been a few days in maceration; and that, in the second, the same effect was produced by the forcible introduction of the fingers.

From all the facts adduced in the present paper, Mr. B. draws the following general conclusions:

"I. That there was no permanent diminution of the cavity during life, in the cases recorded of concentric hypertrophy of one of the ventricles, unconnected with valvular disease, may be inferred from the following circumstances:

"1. That similar appearances have been observed by M. Cruvielhier in the hearts of persons who died by the guillotine; and by Mr. Jackson and others, in subjects whose death had been caused by cholera.

"2. That in these cases the symptoms of cardiac disease were slight, and no other than those which indicate simple hypertrophy; and that there was no intermittence or irregularity of the pulse, no dilatation of the right cavities, or dropsy—symptoms of obstacle to the circulation through the heart, which must have occurred had the cavity during life been so small as it appeared to be.

"3. That, in two of the cases, the cavity was restored by mechanical means to its normal size; and that in none was there any obstacle behind it, by which its permanent diminution could be explained.

"4. That the supposition of increased strength of the parietes, with diminution of the cavity, and that, too, relatively to the area of its discharging orifice, is opposed by the mechanical considerations by which we account for the almost constant occurrence of hypertrophy in cases of dilatation.

"II. In the six cases complicated by extensive valvular disease, the diminution of the cavity cannot be explained by the hypothesis of an obstacle behind it; and, in some of these cases, the existence of an obstacle before it, renders it highly probable that this diminution was merely a passing condition of the ventricle: and as the appearances of concentric hypertrophy were not more marked in these cases than in those of the former category, and as the symptoms of obstacle to the circulation, observed in these cases, were such as would result from the diseased valves, alone, we cannot admit the existence of concentric hypertrophy in the category we are now considering.

"III. Concentric hypertrophy of a ventricle, in a high degree, with obstruction at its discharging orifice, and an extraordinary passage for the blood, occasionally exists as a congenital malformation, and, in most cases, the right is the ventricle so affected.

"IV. Hypertrophy of the heart, to whatever extent it exists, when it is exempt from dilatation of the cavities, and from disease of the valves, does not produce any of the symptoms of an obstacle to the circulation through the heart."

The next article is the *History of a case of Popliteal Aneurism; with observations.* By SAMUEL HADWEN.

This was a case of popliteal aneurism of a very peculiar character occurring in a male twenty-three years of age. The ligature applied at the usual place upon the femoral artery, appeared to have very little effect in arresting the course of the blood into the sac; about twelve days subsequent to the operation considerable hæmorrhage occurred at the spot where the ligature was applied. A ligature was now applied upon the femoral artery immediately below Poupert's ligament. Two days afterwards the hæmorrhage from the spot at which the first ligature was applied recurred to a considerable extent; after an ineffectual attempt to find the mouth of the bleeding vessel, the limb was amputated. Nineteen days subsequently hæmorrhage occurred at the wound in the groin. On the twentieth day at six P. M. a very large and alarming bleeding suddenly burst forth, which produced a frightful effect, and placed the poor fellow in greater jeopardy than he had ever apparently been before. At his request the external iliac artery was tied; brandy having been first given in small but frequently repeated doses. The pulsation at the groin immediately ceased, but the state of collapsed and diminished vitality placed his life in the utmost danger. He rallied, however, and at ten o'clock was comfortable, the stomach having retained

some tea. Countenance more cheerful; pulse sharp and small, one hundred and thirty; surface warm; all stimuli were now interdicted. Next day, patient's appearance much improved; respiration regular and steady; pulse one hundred and twenty, soft and compressible. The abdominal parietes, the previous night so sunk that the ilia stood up as in cases of death after protracted sickness and excessive emaciation, had recovered their tone and natural rotundity. The case went on with perfect satisfaction until the 26th day after operation when, at noon, hæmorrhage again occurred at the wound in the groin, and many ounces of blood were lost. It flowed at first gently from the part, afterwards in a larger stream, but not in a jet. Pressure with the hand restrained it. Graduated compresses of lint were carefully applied, and a truss so adjusted as to bring the pad to make firm pressure directly upon them. On the 28th day the truss was removed; the wound had a very healthy appearance; the discharge was small in quantity, and of a good character; truss reapplied; pulsation of the external pubic artery observable; pulse one hundred. From this time the case went on quite favourably. The wound became perfectly healthy, and contracted considerably: discharge moderate in quantity and quite healthy. On the twenty-ninth day after its application the ligature came away from the external iliac. The wound rapidly and securely cicatrised and on the one hundred and first day after the femoral artery was tied the patient was very much improved in health and appearance, and recovering his strength and flesh fast.

Article twenty, *Case of Hydatid of the Liver, successfully tapped.* By WILLIAM TRAVERS COX, M. D. This is a very interesting case, in which the patient, labouring under symptoms of hepatic disease with enormous distension of the abdomen, was tapped and twenty-one pints of fluid, of the colour and consistency of common bile were drawn off. Subsequently he was put upon the use of iodine internally, and externally over the region of the liver. The patient took iodine with nitrate of potass and a diuretic drink; at the same time he took occasionally small doses of elaterium, and had the strength supported by a moderately nutritious but unstimulating diet.

“Under this treatment there was an increase in the quantity of urine, which, from being high-coloured and depositing a copious sediment, became pale, clear, and not turbid, as formerly, on the application of heat. From the time when the operation was performed, there was no fresh accumulation of fluid in the abdomen; the liver at the end of some weeks was very sensibly decreased in size, the stools were tinged with bile, the kidneys acted regularly, there was no pain or tenderness, and the man's health, strength, and appetite becoming nearly as good as formerly, he returned to his employment as a coal heaver.”

Upwards of four years subsequently he died of disease of the lungs. Upon dissection the lungs were found loaded with frothy sanguinolent fluid throughout, excepting towards the base of the right lung, which was firm and uncrepitating. The upper lobes of both lungs, but especially the left, contained tubercles in different degrees of maturity, but none were larger than a pea; the whole of the base of the right lung adherent to the diaphragm; towards the posterior edge this adhesion was quite ligamentous. On dividing this part of the lung, a small cavity was seen lined with firm, almost cartilaginous membrane, and containing clots of dark grumous blood, puriform matter, and pieces of coagulated fibrine. The cavity, almost the diameter of two fingers, was continuous with a dilated bronchial tube, whose lining membrane was thickened and here and there ulcerated; one or two vessels opened into the cavity. The surrounding lung was condensed, and of a grayish yellow colour, but not presenting tubercles. The first object seen on opening the abdomen was a large distended cyst with a smooth surface, occupying, as at first appeared, the position of the gall bladder. When the liver was completely exposed, and the cyst brought well into view, it was found attached by a small portion of its surface to the right of the gall bladder, in front of the transverse fissure. The liver was somewhat enlarged and throughout in a state of venous congestion. The cyst was attached by almost a fifth of its surface to the substance of the liver. It had no other connection than through filiform products of the fibrous coat of the liver. This spread out into a fibrous investment, which covered the whole surface of the cyst.

When removed the cyst was of an oval shape, about four times the size of the gall bladder, contracted in its centre, where was a piece of cartilaginous structure. It was fully distended, elastic, and semi-transparent towards its surface, when held before the light. The cyst being freely opened, a firm transparent yellow gelatinous mass was squeezed out, presenting exactly the shape and smooth surface of the cyst. It was found to consist of concentrated layers, which could easily be unrolled from each other, about two lines in thickness; the outermost were most transparent and least coloured. Towards the centre, they became more opaque, yellow, less firm and distinguishable; within all was a quantity of concrete bile. The outer layers were firm and not easily torn; heat rendered them more firm and opaque; in sulphuric and nitric acids they became softer and more transparent, and again firm and opaque upon the addition of water. Between the layers, were here and there small pieces of a substance of a waxy feel and consistency, and of a bright vermilion colour. The inner surface of the cyst was smooth and serous, but abraded in places by the deposit of a concrete bilious matter, which was not removed by maceration in water and spirits.

The 21st article is *On Black Expectoration, and the Deposition of Black matter in the Lungs, particularly as occurring in Coal Miners and Moulders in Iron works.* By WILLIAM THOMPSON, M. D.—In a previous communication, noticed in our number for November, 1837, (Vol. XXI. p. 193,) Dr. T. relates a number of instances of black discolouration of the sputa, observed during life, and of black infiltration of the lungs and bronchial glands, ascertained after death, in persons who, from their occupation, were particularly exposed to the inhalation of carbonaceous powders or gases; in the present communication he presents a summary of the observations and opinions respecting black sputa and black deposition in the pulmonary organs, to be found in the writings of authors, previously to the time when the class of cases, previously noticed, began to attract attention; showing that the black deposition may occur in the pulmonary organs, independently of the habitual inspiration of an atmosphere, which can be supposed to be peculiarly loaded with carbonaceous matters. In the close of the communication a few cases are related, illustrating the occurrence of black expectoration, or of black deposition in the lungs in individuals whose occupations did not appear to render them peculiarly liable to an accumulation of carbonaceous matter in the respiratory organs; and in whom, at the same time, there existed no traces of a melanotic diathesis. Communications are also presented from gentlemen of great sagacity, and much experience in the diseases of the workmen employed in coal mines, who have never observed, in that class of persons, appearances, such as were described in Dr. T.'s first communication.

Article 22d is an *Account of a Case of enormous Ventral Aneurism, with the post mortem appearances.* By SIR DAVID I. H. DICKSON, M. D.—This we shall notice elsewhere. (See the department of Surgical Pathology and Therapeutics in the *Summary* of this Number.)

The 23d article is *On the proportions of animal and earthy matter in the different bones of the human body.* By G. O. REES, M. D., &c. The general results of Dr. Rees's analyses are thus stated:

"1st. The long bones of the extremities contain more earthy matter than those of the trunk.

"2d. The bones of the upper extremity contain somewhat more earthy matter than the corresponding bones of the lower extremity; thus the humerus more than the femur, and the radius and ulna more than the tibia and fibula; this difference is, however, small, being about one half per cent.

"3d. The humerus contains more earthy matter than the radius and ulna; and the femur more than the tibia and fibula.

"4th. The tibia and fibula contain, as nearly as possible, the same proportions of animal and earthy matter, and the radius and ulna may also be considered alike in constitution.

"5th. The vertebra, rib, and clavicle are nearly identical as regards the proportion of earthy matter; the ilium containing somewhat more, the sacrum and

sternum somewhat less; the sternum containing more earthy matter than the scapula.

"6th. The bones of the head contain considerably more earthy matter than the bones of the trunk, as observed by Dr. J. Davy; but the humerus and other long bones are very nearly as rich in earth.

"7th. The metatarsal bones may probably be ranked with those of the trunk in proportional constitution."

"It appears that the bones of the trunk in the foetal skeleton are as rich in the proportion of earthy matter as those of the adult; at least the difference is too small to be material. The deficiency of earthy matter in the bones of the foetal extremities is simply explicable on the fact that such an excess of earths as appears necessary to very great strength of bone is not needed at birth, and, therefore, only appears in after life."

The 24th and last article is *On a successful plan of arresting the destruction of the transparent cornea from acute purulent inflammation of the conjunctiva*. By FREDERICK TYRRELL. This paper will be found noticed in our quarterly *Summary*, under the head of Ophthalmology. D. F. C.

ART. XVIII. *Grundriss der Speciellen Semiotik nach den quellen bearbeitet*. Von Dr. HEINRICH EMIL SUCKOW. Kreisphysikus in Jauer. Jena, 1838, 4to. pp. 296.

Outlines of Special Semiology. By H. E. SUCKOW, M. D. District Physician in Jauer.

THE plan of these outlines is in our judgment radically defective. The work unquestionably comprises much interesting matter, but presented in a form which renders it of little practical value. The object the author had in view in preparing it was a very excellent one—to supply the student with a correct manual of symptomatology—he has nevertheless altogether failed, we apprehend, in carrying that object into effect.

An intimate acquaintance with the *symptoms* of disease is essential to the physician, in order to enable him to determine with accuracy the situation, character and extent of the latter. The great object indeed of all pathological investigations is to enable him to refer the various morbid phenomena present in any given case, to the particular lesions by which they are respectively produced—hence semiology cannot, with propriety or advantage, be separated from pathology. To arrive at any useful practical results the different lesions of the tissues and organs of the body, together with the peculiar morbid phenomena to which they give rise, must be studied in connection. To consider each symptom of disease separately, without any reference to other symptoms to which it is either directly or indirectly related, or with which it is most usually associated, can have no other tendency than to confuse the mind of the student. For, all important as is a minute acquaintance with the peculiar characteristics of individual symptoms, it is nevertheless mainly from the manner in which particular morbid phenomena concur and succeed to each other that a correct diagnosis and prognosis can be drawn.

The indications to be derived from the condition of the intestinal discharges, are, in many cases of disease, invaluable; but from loose general statements like the following, which we extract from the 147th section of the *Outlines* before us, and present as a very fair specimen of the character of the work generally, scarcely any valuable practical inferences can be derived.

"The character of the alvine discharges depends upon the nature of the food taken, and the condition of the stomachic, intestinal, hepatic and pancreatic secretions, and differs in different individuals and at the several periods of life.

"*Copious discharges* from the bowels are indications of a vegetable diet; of excess in eating; of long continued retention of the feces; of a profuse secretion in

the intestines, caused by catarrh or inflammation, or of ulceration of the intestinal mucous membrane in cholera, typhus fever and phthisis.

“*Colliquative diarrhœa* (very profuse discharges with general debility) indicates ulceration of the bowels, the latter stage of phthisis, dothinenteritis, atony of the intestinal canal.

“*Scanty discharges* from the bowels indicate a restricted diet or one principally of flesh, a sedentary life, stricture of the œsophagus or of the bowels, organic change in the stomach or pancreas, dysentery, a febrile condition, or increased secretion in other organs.

“*Brown discharges* are normal in adults and arise from the due admixture of the bile with the chyme—they are also present in slight diarrhœas—they occur more generally in diseases seated in the lower than in those affecting the upper portion of the intestinal canal.

“*Chocolate-coloured discharges* indicate ulceration of the intestines—cholera asphyxia.

“*Yellow discharges* are normal in children, indicating a mixture of the bile with much mucus. They occur also in catarrh, and inflammation of the intestinal mucous membrane, ulceration, nervous fevers, scrofula, disease of the liver; also from the use of milk, saffron, rhubarb or sulphur.

“*White discharges* indicate a deficiency of bile; inflammation, disturbance, or organic change of the liver; cholera, an impediment to the flow of the bile; an increased secretion of intestinal mucus in catarrh of the bowels and dysentery.

“*Gray discharges* indicate disease of the liver, particularly softening of that organ—cholera, enteritis.

“*Black discharges* may be produced by some colouring matter introduced into the bowels, as when whortleberries have been eaten, or some preparation of iron has been taken into the stomach; or they may result from bile (when they are insoluble in water) or from blood (by which the water will be coloured;) from organic change or scirrhus of the liver; from bilious fever; abdominal plethora; putrid fever; organic change of the spleen or pancreas; melancholia, melæna, or they may result from an admixture of blood that has remained some time in the bowels and become black from the action of the intestinal gases.

“*Green discharges* may arise from an admixture of green vegetable matters taken as food, or they may result from an overflow of unmixed bile—from the use of mercury—from bilious and nervous fever, acidity, softening of the stomach, phrenitis, hydrencephalus, gall stones, inflammation of the stomach or of the duodenum.

“*Red discharges* may result from red berries and other matters taken into the stomach, or from an admixture of blood—they indicate a fatal termination in cholera asphyxia.”

That the physician ought to be familiar with all *the facts* comprised in the foregoing extract is certainly true; but he will be able to acquire a knowledge of them, and at the same time of other facts of even a more important character, by studying the several lesions to which the different tissues and organs are liable, and tracing carefully the disturbances of function to which these lesions ordinarily give rise, not only in the parts in which they are seated but in others to which they are physiologically allied. It is in this manner alone that the practitioner will be enabled to determine from the symptoms in any given case, the location, nature and extent of the actual disease with which the patient is affected.

D. F. C.

ART. XIX. *Human Physiology: illustrated by Engravings.* By ROBLEY DUNGLISON, M. D. M. A. P. S. &c. &c. Third edition, with numerous additions and modifications. 2 Vols. 8vo. pp. 568—619. Philad. 1838.

In a notice of the first edition of Professor Dunglison's *Physiology* which appeared in this Journal, February, 1833, we considered ourselves warranted in

pronouncing it to be "one of the best treatises upon human physiology in the English language,"—and, although since that period numerous elementary works upon physiology have been presented to the public, many of which are of unquestionable merit, yet we find no cause to modify in any manner the opinion we then gave.

The author has, with commendable industry, collected, and embraced in the present edition, all the leading physiological facts that have been established, subsequently to the appearance of the two former ones. This, with other judicious modifications which the work has undergone, renders the edition before us, a very full, and, at the same time, very fair exposition of the present state of our knowledge in regard to the physiology of the human frame.

In his preface to the present edition, Professor Dunglison acknowledges his indebtedness for many of the improvements it exhibits to the work of Müller and the very voluminous treatise of Burdach. We should have been pleased had he made a much more extensive use of the very valuable matter furnished by the former, especially upon those points to which the investigations of the Berlin professor have been more immediately directed; there is in his deductions and statements so much of caution and of the most perfect candour, as strongly to impress upon us a conviction of their accuracy.

The work before us, although it may not, even with all the additions and improvements which mark the third edition, bear, in some particulars, a comparison with a few of the continental treatises upon physiology of which English translations have been recently published, is nevertheless much better adapted than the latter as a guide for the student. The very circumstances which render these valuable as books of reference impairing their usefulness as manuals for the use of such as are desirous of acquiring a knowledge of the science of which they treat.

The work of Professor Dunglison we have no hesitation in recommending as in every point of view, one of the very best *elementary treatises* on physiology with which we are acquainted—it will be found equally well adapted for the guidance of the unprofessional as of the professional student. D. F. C.

ART. XX. *On the Induction of Premature Labour.* By FLEETWOOD CHURCHILL, M. D., Physician to the Western Lying-in Hospital, and Lecturer on Midwifery, &c., in the Richmond Hospital School. Read before the Surgical Society of Ireland, April 7, 1838. (From the Dublin Journal of Medical Science, Sept. 1838.)

In certain cases of pelvic distortion where the birth of a living child, at the full time, had been repeatedly found impossible, it has not unfrequently happened that the life of the child has been preserved by accidental premature labour, at the seventh or eighth month of utero gestation. This occurrence led to the inference that the artificial induction of premature labour might, in certain cases of pelvic deformity, advantageously supersede operations which not only necessarily destroy the fœtus, but involve considerable risk to the mother. The proposal was not to deliver the fœtus artificially, but merely as stated by Ritzen (*Gemeinsame deutsche Zeitschrift für Geburtshilfe*) to communicate a slight but certain impulse, by virtue of which the process of parturition may be carried on and completed by the natural powers. When this operation was first proposed it met with the most decided opposition. It was denounced as criminal, and even so late as the year 1827, was pronounced by the Royal Academy of Medicine of France to be "*inconvenient et presque immoral.*"

At the present day, though on other grounds it is objected to by some high authorities, as Osiander, Stein Joerg, &c., nevertheless it is advocated by the greater number of the most distinguished obstetricians, among whom may be mentioned the names of Denman, John Clarke, John and James Barlow, Burns, Merriman, Conquest, Gooch, Blundell, and Hamilton in Great Britain; Petit,

Velpeau, Stoltz, Paul Dubois, Dezeimeris, Burckhardt and Figueira in France; Ant. May, Weidmann, C. Wenzel, Mende, Bettcheler, Kluge, Siebold, Burck, Reisinger and Froriep in Germany; Ferrario, Billi and Lovati, in Italy; Paul Scheel in Denmark, Solomon de Leyden and Professor Vrolek in Holland; and M. Marinus in Belgium.

Within a short period the measure has been advocated by Edward A. Corey, Esq., by whom a case is recorded in which he adopted it, with success both for mother and child, (see our No. for Feb., 1838, p. 516,) and still more recently it has been advocated by Dr. FLEETWOOD CHURCHILL, who in an elaborate paper, published in the *Dublin Journal of Medical Science*, for September last, discusses the propriety of inducing premature labour, and the circumstances under which it should be had recourse to. The subject is one of so much interest, that a full analysis of this last paper will, we are sure, be acceptable to our readers.

With the opponents to the practice, its *morality* rather than its *usefulness* has been the first consideration.

Dr. Denman remarks on this point: "With regard to the morality of the practice, the principle being commendable, that of making an effort to preserve the life of a child, which must otherwise be lost, and nothing being done in the operation which could be injurious or dangerous to the mother, but, on the contrary, a probability of lessening both her danger and suffering, I apprehend, if there be a reasonable prospect of success, no argument can be adduced against it which will not apply, with equal force, against any kind of assistance at the time of parturition, against inoculation, or medicine in general; and, in fact, against the interposition of human reason and faculties in all the affairs of life." (Introduction to Midwifery, p. 319.) This reasoning is so conclusive that we shall dismiss this branch of the inquiry and proceed to consider the next, namely, its safety to the mother and child.

That some risk is incurred by the mother must be admitted; but not more than in accidental premature labour. Of 161 cases collected by Velpeau, only eight mothers died, and five of these deaths were from causes unconnected with parturition. Of 280 cases collected by Figueira, only six mothers died. Dr. Kelly performed the operation three times, successfully, in one person; and of Dr. Merriman's 46 cases not one proved fatal. These statistical details justify the conclusion that the method in question, if carefully conducted, is not very hazardous to the mother; it certainly is much less so than the operation for lessening the head of the foetus in utero, and incomparably less perilous than the Cæsarean operation or the division of the symphysis pubis.

The following statistical data collected by Dr. Churchill will enable us to estimate the actual risk to the foetus. Of 12 cases mentioned by Denman, the majority of the children were saved. Mr. Barlow reports 17 cases, of which six children were still-born; five died a few hours after birth, and six lived. Of Dr. Merriman's, Sr., 10 cases, four children were saved. Dr. Merriman mentions 46, of which 16 children lived. Dr. Conquest says of nearly 100 cases, about half the children were born alive. According to Velpeau, 115 children were saved out of 161 cases; and of 280 cases collected by Figueira, 166 children were saved. Dr. Hamilton states, that "previous to the 26th of January, 1836, the author brought on premature labour in 21 individuals, on account of defective apertures; viz., in 14, once; in one, twice; in three, thrice; in two, four times; and in one, ten times. Of the 45 infants thus prematurely brought into the world, 41 were born alive. The death of the four still-born can be readily accounted for." "In the practice of Mr. Moir, and Dr. John Moir, premature labour was induced 12 times in six women; nine of the infants were born alive, and the cause of the death of the three still-born infants could not be attributed to the operation."—*Practical Obs.* Pt. II., pp. 180—2.

It thus appears that more than half the children were saved, notwithstanding the greater frequency of mal-presentations in premature labour than in labour at full time. In Dr. Merriman's cases, for example, there were 18 mal-presentations out of the 46, only one of which were saved. If then we could substract, says Dr. Churchill, all the cases of mal-presentations we should find, I doubt not,

that the proportion of children lost, to those saved by the operation, was very much smaller.

The next subject of inquiry is the *utility* of the operation; and, in forming an estimate of this, it must be borne in mind that it is to be considered only as an *alternative*; and to fix its value, we must compare the results of artificial premature labour with the mortality attendant upon each of the other alternatives in the cases which are supposed to demand it; viz., the use of the *perforator*, *symphyseotomy*, and the *Cæsarian section*.

Now, by the use of the *perforator*, not only are all the children destroyed, but extensive statistics have shown that about one in five of the mothers perish.

In *symphyseotomy*, Barlow, Capuron, and Velpeau state the child rarely survives. Of 41 cases reported by Duges, 14 women and 23 children were lost; 44 cases are enumerated by Velpeau, of which 14 died; and Figueira has collected 157 cases, of which 72 women died.

"The *Cæsarean section*, says Dr. Churchill, "is the '*dernier resort*' of midwifery, involving the utmost danger to the mother and child, and justifiable only when no other chance for either remains.

"Baudelocque has collected 73 cases, out of which 42 mothers died.

Michaelis " " 110 " " 62

Dubois " " 160 " " 100

Figueira " " 790 " " 424

"Thus more than half the mothers were lost, and of the children very few indeed are saved.

"If then to the *absolute* advantages of the operation proposed, be added the *comparative* gain from avoiding these terrible *alternative* operations, we may form a tolerably correct estimate of the *utility* of the 'induction of premature labour.' "

Having thus established the *morality*, *safety* and *utility* of the operation, Dr. Churchill next proceeds to inquire as to the cases in which it is available.

"1. The class of cases, for which it was first proposed, and in which it has been most frequently employed, is that in which the diameters of the upper outlet of the pelvis are too much reduced by distortion to permit the passage of a foetus at the full term, and yet not so much diminished as to prohibit the passage of a foetus at an earlier but still '*viable*' age. In the words of Denman: 'it is under circumstances and in situations preventing the successful use of the vectis or forceps, and just compelling us to the fatal measure of lessening the head of the child, that it may be a duty to propose on a future occasion, the bringing on of premature labour.'

"The first step is to endeavour to ascertain the size of the foetal head at different periods of utero-gestation. After the seventh month, in order that by adapting the diameters of the deformed pelvis to the appropriate diameters of the foetal cranium, we may be enabled to fix upon the moment when they are in correspondence, for the induction of premature labour.* It is, of course, impossible to do this in any individual case, but an approximation may be attempted by taking the measurements in a considerable number of cases at the same periods.

The following table has been thus constructed by M. Figueira.

Age of Fœtus.	Bi-parietal Diameter.	Occipito-parietal Diameter.	Occipito-bregmatic Diameter.
7th Month.	2 in. 9 lines.	3 in. 8 lines.	2 in. 10 lines.
7½ " "	3 " " "	3 " 9 " "	3 " " "
8th " "	3 " 1 " "	3 " 10 " "	3 " 1 " "
8½ " "	3 " 2 " "	4 " " "	3 " 2 " "
9th " "	3 " 4 " "	4 " " "	3 " 4 " "

* D'abord comment s'assurer de l'époque où il faut provoquer l'accouchement prématuré, puisque la tête étant incommensurable dans la matrice, il est impossible d'en assigner le rapport avec le bassin?"—Capuron, *Cours Théorique et Pratique sur l'Accouchement*, p. 538.

"To this kind of calculation it has been objected, that we cannot be quite sure of the exact age of the fœtuses measured, and to the practical use of it, that the female cannot be quite sure of the exact period of pregnancy. (*Blundell*.*) That this objection has a certain weight, must be admitted, but that it is sufficient to prohibit the operation, I cannot believe, for it may always be obviated in practice, by assuming the longest possible period of pregnancy. If, for example, a patient imagines that she is six months pregnant, but that she may be six and a half, by calculating for the six and a half months we shall have assumed the largest size to which the fœtal head can have attained, and if labour be not brought on till seven months and a half, we shall also have secured a fœtus of the 'viable' age.

"Ritzen has made another series of calculations, which have led to the following practical adaptations.

"He says that labour may be induced

"At the 29th week, when the antero-posterior diameter of the pelvis is 2 in. 7 lines.					
" 30th	"	"	"	"	2 " 8 "
" 31st	"	"	"	"	2 " 9 "
" 35th	"	"	"	"	2 " 10 "
" 36th	"	"	"	"	2 " 11 "
" 37th	"	"	"	"	3 " 0 "

"There is a very slight difference between the tables of Figueira and Ritzen, which may be allowed for in practice. The compression of the fœtal head will also render its diameter less than the subsequent measurement would lead us to suppose.

"It will be at once observed, that there are two measurements of the pelvis which limit the operation; if the pelvis exceed the greater measurement, the operation is uncalled for; and if less than the least, it will not succeed in saving the child. The smallest of these diameters appears to be about two and a half inches, and the greater three and a quarter. (*Busch*.) If the pelvis in its sacro-pubic diameter, be less than the former, a 'viable' child will not pass, and it is generally admitted that a living child may be propelled through a pelvis whose antero-posterior diameter is three and a half inches. The opinions of different authors accord with this calculation. Dr. John Clarke† says 'that the time may be bounded on one side by seven months, and on the other by eight and a half.' 'When the distance between the pubes and sacrum is under three, yet all but three inches, eight months may be allowed; when the distance is two and three quarters, seven months; and so on.' Mr. James Barlow‡ observes, 'I presume, then, that a pelvis, the small diameter of which measures, from pubis to sacrum, about two inches, or two and a half inches, appears to favour the success of this operation more than any other dimensions.' Dr. Gooch§ recommends us 'to reckon seven calendar months and one week from the last menstrual discharge, and then bring on premature labour.' Dr. Blundell|| names seven months and a fortnight, if our object be to save the child. With great confidence, therefore, the author can recommend this practice, in all cases where the deficiency of space in the apertures of the pelvis does not fall under two inches and a half. (*Hamilton*.¶)

"M. Figueira observes, that 'every time that the sacro-pubic diameter is from two and a half to three and three quarter inches, premature delivery is indicated from seven to eight and a half months.'

"M. Marinus advocates the end of the seventh month, when the pelvis is two and a half inches in its sacro-pubic diameter.

* Principles and Practice of Obstetrics, p. 561.

† London Practice of Midwifery, p. 235.

‡ Medical and Physical Journal, vol. v. p. 46.

§ Lectures edited by Mr. Skinner, p. 222.

|| Principles and Practice of Obstetrics, p. 560.

¶ Practical Observations, Part II., p. 183.

"M. Busch fixes upon two and three quarter inches as the medium diameter, and the 28th week as the best period for the operation.

"Another difficulty still remains, which has been put forward as a very serious objection by the opponents of this operation; and this is, the uncertainty of ascertaining the exact diameters of the pelvis in the living subject. Various mechanical contrivances have been proposed by Aitken, Coutouly, Baudelocque, Asdrubali, Chaussier, and others, (pelmiveters as they are called,) into the merits of which I do not propose to enter at present; it is sufficient to say, that in this country they could rarely or never be employed. Nor do I think them necessary; a well practised finger is, after all, the best pelvimeter, and will yield sufficiently accurate information. But giving the utmost force to this objection, to what does it amount, as Velpeau justly observes: 'if the pelvis be wider than we thought, premature delivery (at or after the seventh month) is accomplished without risk. If, on the contrary, the narrowing be more considerable, the foetus will certainly perish, but then had no operation been attempted until the full term, the foetus would equally have been lost, and the mother would have run greater risk.' Besides, much information may be derived from the history of the previous labour of the patient, for it is rarely or never for the first child, that the induction of premature labour is proposed. Dr. Merriman* remarks, 'that the use of the perforator in a former labour, is not *alone* to be considered as a justification of this operation.' This is undoubtedly true in the present uncertain state of opinion, concerning the use of the forceps and crotchet, inasmuch as the latter instrument is frequently used where there is no distortion.

"But if we are convinced that the perforator was used from the impossibility of otherwise delivering the patient, it might then be an adequate reason; and if it further appeared that her labour had been thus terminated more than once, and for the same reason, the operation would then seem to be imperatively required. (*Blundell.*†)

"2. It is possible that a narrowing of the bis-ischiatic diameter of the lower outlet, or a morbid growth (fibrous or osseous tumours,) offering a fixed impediment to parturition, might become an equally valid ground for the induction of premature labour. (*Denman.*‡)

"3. In the cases I have supposed, the safety of the child is the great object of the operation; and they are limited, therefore, to those patients in whom the pelvis, though deformed, is still large enough to permit the passage of a '*viable*' child. But there are cases where the distortion is so great as to render the passage of a seven months' child impossible, and others still worse, when no reduction of the child's bulk will enable it to pass. I do not see why abortion should not be induced at an early period in such cases. The life of the child must inevitably be sacrificed, and the safety of the mother alone regarded; and surely after the calculations I have adduced, it cannot be pretended that Cæsarian section, the *alternative* in these cases, offers an equal chance to the mother, or such a chance to the child as would justify our preferring it.

"An objection to this extension of the operation has been made by Dr. Merriman and others, on the score that it would be 'opening a wide door to the dreadful abuse of the operation.' That, in short, by multiplying the examples of inducing premature labour or abortion, we should run the risk of its being performed unnecessarily or for wicked purposes. But so may the fact of its being performed at all, and so may the practice of using ergot of rye for the purpose of exciting uterine contractions. I do not, in truth, see much force in this objection, nor do I anticipate any such prostitution of their power on the part of the members of our profession; and beyond the profession the operation is not likely to be much known. It will of course be necessary that the case be thoroughly investigated by more than one person, and the time appropriately chosen.

* Synopsis of Difficult Parturition, p. 183, *fourth edition*.

† Principles and Practice of Obstetrics, p. 559.

‡ Introduction to Midwifery, p. 321.

"4. In certain cases of rupture of the uterus, the cause is almost entirely mechanical. There is some narrowing of the upper outlet, perhaps a projection of the promontory of the sacrum, offering an obstacle to the ready descent of the fetal head, which is driven forward with great force by the uterine contractions. Under such circumstances, the head may be pushed to one side; and if the tissues are not very firm, it will be driven through them into the cavity of the peritoneum. Recovery from such an accident is very rare, but nevertheless it has occurred; and if the woman become pregnant subsequently, a premature delivery may save both mother and child. As the best argument I can employ in favour of this operation in such cases, I may mention that it was adopted successfully by the late distinguished master of the Great Britain street Lying-in Hospital, (Dr. Collins.) The patient had recovered from rupture of the uterus and became pregnant. She was admitted into the hospital in the seventh month of pregnancy, and the membranes were ruptured on the 4th of March, 1832. Labour came on on the seventh, and was completed in ten hours. The patient was delivered of a living child, and recovered. The child, however, lived but two days. The case is perfectly illustrative of the advantages which may be derived from the operation in this class of cases. The mother was saved, and the child at birth appeared likely to live; its death does not seem to have resulted either from its early age, or from the labour.*

"5. Dr. Denman† observes, 'there is another situation in which I have proposed, and tried with success, the method of bringing on premature labour. Some women who readily conceive, proceed regularly in their pregnancy, till they approach their full period, when, without any apparently adequate cause, they have been repeatedly seized with rigour, and the child has instantly died, though it may not have been expelled for some weeks afterwards. In two cases of this kind, I have proposed to bring on premature labour when I was certain the child was living, and have succeeded in preserving the children without hazard to the mothers. There is always something of doubt in these cases, whether the child might not have been preserved without the operation, but as such cases often come under consideration, and as I am disclosing all that my experience has taught me, it seemed necessary to mention this circumstance.' Mr. Barlow‡ thinks the 'doubt' expressed in the above extract a sufficient ground for negating the operation. Whether it be so or not, I am not prepared to say; on such a point the opinion of the many experienced men who are members of this society would be most valuable.

"6. The question has been quoted, whether it would be right to induce premature labour on account of the presence of certain diseases caused by, or connected with pregnancy. Denman remarks: 'The propriety of this practice has also been considered when women have, during pregnancy, suffered more than common degrees of irritation; and especially when the stomach is in such a state that it cannot bear nourishment of any kind or in any quantity, and the patients are thereby reduced to a state of dangerous weakness. Presuming that these symptoms are purely in consequence of pregnancy, it may, perhaps, be justifiable to bring on premature labour.' Dr. Merriman§ relates a case occurring in the practice of a 'provincial surgeon of considerable eminence.' 'She was teased with a very severe cough, and her stomach was so irritable as to retain no food whatsoever, nor even opium in a solid form. She had taken absorbents, stomachics, bitters, aromatics, and opiates, without experiencing any relief; liniments, fomentations, and blisters, had been extensively applied without benefit, and she was thought to be sinking into her grave, when it was proposed as a last resource, to bring on premature labour, six weeks before the full time, and the patient was delivered of a living child, and ultimately recovered.'||

* The details of the case will be found in Dr. Collins's "Practical Midwifery," p. 255.

† Introduction to Midwifery, p. 321.

‡ Med. and Phys. Jour., vol. v. p. 52.

§ Med. Chir. Trans.

|| A case of fatal vomiting, during pregnancy, is related by Dr. Johnson in the Lancet, March 3, 1838, p. 825. "A lady, 30 years of age, soon after marriage ceased

"This is the only case I happen to have met with; and there are but few allusions to the operation under such circumstances in English authors. In a report of the Berlin Lying-in Hospital,* I find a reference made to its performance in cases of rheumatism of the uterus.

"It sometimes happens, that the serous effusion which is usually confined to the lower extremities of pregnant females, is extended to the cavities of the pleura and peritoneum, and, as it thus gives rise to a train of severe and perhaps dangerous symptoms; might not the induction of premature labour be advisable in some cases?

"On this part of the question, I confess it appears to me almost impossible to lay down definite and general rules; the decision must rest with the judgment of the medical attendant on each individual case.

"7. The only objection made by Baudelocque to his condemnation of artificial premature labour is in those cases of great uterine hæmorrhage, before the completion of the term of utero-gestation, when the child is probably destroyed, and the safety of the mother compromised.†

"Such are, most frequently, cases of 'placenta prævia,' and if labour could be induced, it would afford, he says, the surest safeguard for the life of the mother. A serious obstacle to the benefit anticipated, is the length of time which may elapse between the attempt to bring on labour and the setting in of pain. The relief sought for in hæmorrhage should be speedy, as the danger is pressing.

"These," says Dr. C., "are all the circumstances which have ever been considered to justify our interference in the manner proposed."

There are other circumstances, however, in which, perhaps, a resort to this measure might be justifiable. For instance, a lady of this city, in whom there is no appreciable pelvic deformity, has lost all her children, five in number, in consequence of the great protraction of her labours, resulting from the large size of the head of her fœtuses, and the complete ossification of their cranial bones. The expediency of inducing premature labour in a future pregnancy in such a case might be defended. We are aware, however, that there are objections to it, and do not mean to discuss the question at present; but shall restrict ourselves to a mere allusion to the case, which we regard as one of extreme interest. We hope, before long, that our friend, who has charge of the case, will enrich our pages by a full account of it.

The next subject to be considered is the *method* of operating.

Five different methods of exciting uterine contractions have been adopted and recommended by different practitioners.

"1. Abdominal frictions, and manipulation, with warm baths, &c. have been advised, but they very rarely succeed, their supposed advantage being the absence of unnecessary irritation.

"2. Separating the membranes for two or three inches around the os uteri will frequently bring on labour; and as this is the closest imitation of natural labour, it has been preferred by many. (*Hamilton, Riecke.*) Dr. Hamilton‡ remarks, 'that he is now convinced, from the experience of the last ten years, that if there be a sufficient portion of the decidua separated from the cervix uteri, there is no occasion for the introduction of the open male catheter,' i. e., for puncturing the

to menstruate, and became affected with morning sickness, which symptoms were naturally enough attributed to pregnancy. The sickness, however, gradually became worse, and at last nothing of any kind could be retained on the stomach. Pregnancy was not detected, but the disorder attributed to some disease of the pylorus. The sickness and extreme emaciation were the only symptoms present. After death no morbid appearances were observable in any part of the body. The uterus contained a fœtus about four months old. This patient was literally starved to death." "The treatment pursued consisted in the use of various salines, anti-emetics, counter irritation, leeches, acetate of morphia sprinkled over a blistered surface, &c."

"Surely the induction of premature labour in this case, would have been justifiable as affording the mother an additional chance for recovery."

* *Lancet* for Jan. 27, 1838.

† *L'Art des Accouchemens*, vol. ii. p. 288.

‡ *Practical Observations*, Part II., p. 180.

membranes. Dr. Conquest considers it as effectual as the other methods, and much safer for the infant, as saving it from pressure during the pains. If it fail, we can still have recourse to the third plan.

"3. The membranes may be ruptured, either directly or obliquely. (*Conquest.*) For this purpose a female catheter may be used, or a piece of wire, or a canula, having concealed within it a spring trocar. (*Waller.**) Care must be taken to wound neither the mother nor child. From its great certainty, this method has been most generally adopted.

"4. M. Klugè has proposed and practised, with great success, the dilatation of the os uteri, by means of a piece of sponge placed within it, and maintained there by a plug in the vagina. Velpeau's experience of the value of these different plans is thus expressed: 'The two latter methods alone are successful. By the third, the effect is not always produced; it required three operations in the case related by M. Riecke. The separation of the membranes (the second method) is not sufficient to bring on uterine contractions; as the distension of the cervix is not permanent, the first attempt is rarely successful. Distension, by means of a piece of sponge, as proposed by M. Klugè, is much more certain. The irritation which results is permanent, progressive, regular, and sustained by the plug which is maintained in the vagina. Under the influence of such an excitement, uterine action is soon brought on, and it rarely fails to acquire sufficient energy.†

"5. Ergot of rye is now pretty generally supposed to have the power of causing uterine contraction; and if this be the case, it will be found to be probably the most effectual and safe mode of inducing premature labour, because we can preserve to the child the safeguard of the liquor amnii, which, as we have seen, is of the greatest importance.

"Dr. F. H. Ramsbotham‡ has mentioned several cases in which it was tried for this purpose. Labour was brought on by its use alone, at the seventh or eighth month, without interfering with the membranes of the os uteri. In the doctor's own words, '*egomet ipse tamen permulta vidi exempla, in quibus partus prematuris inductus fuit, septimo vel octavo graviditatis mense peracto—solo secalis cornuti usu; ovuli membranis integris servatis; ore uteri occluso neque digito, neque ullo alio modo ad patefactionem excitato.*' Against this method, there has been urged the danger of the child, and it would appear not altogether without foundation. 'It has happened to me,' says Dr. Ramsbotham, 'in four different instances, to witness the death of the fœtus, a few hours after death, by convulsions, *postquam partus prematurus inductus fuerat ope solum secalis cornuti.*'

"It has been suggested, that the application of the extract of Belladonna might aid in the dilatation; but, independent of the fact being doubtful, the practice would be dangerous, in consequence of the active absorption, and the development of the poisonous effects of the medicine. Dr. Montgomery has mentioned to me some such cases, which came under his own observation, and others are on record.

"An interval, varying from 24 to 96 hours, (*Conquest,*) generally elapses after the operation before uterine action commences; which it does, sometimes, by shivering and feverishness. 'Great disturbance in the nervous system,' says Dr. Gooch,§ 'is produced by it; severe rigours, rapid pulse, and delirium are the occasional consequences; but these symptoms, proceeding from nervous irritation, do not continue long enough to produce any serious consequences.'

"In other cases, these symptoms were altogether absent. The patient will require the same management as after ordinary labour. It will be advisable to have a nurse in readiness to supply the infant with its natural nourishment, until the mother shall have milk for it."

* See Denman's Introduction, p. 322, note.

† *Traite Complet de l'Art des Accouchemens*, p. 440, Ed. Bruxelles.

‡ Lectures in Med. Gazette for 1834, vol. xiv., p. 85.

§ Lectures by Skinner, p. 223.

The above details justify, Dr. Churchill conceives, the following conclusions:

"1. The induction of premature labour is not in itself immoral, and so far from being unsafe or destitute of utility, it does not add materially to the danger of the mother, and in many cases may save the life of the child.

"2. That if the object be to save the life of the child, the cases to which it is applicable, are those in which such a narrowing of the pelvis exists, as will prohibit the passage of a full-grown foetus, but not that of a younger, but still 'viable' one.

"3. That with this view the attempt will be useless, if the sacro-pubic diameter be less than two and a half inches, and superfluous, if that diameter be more than three and one-fourth inches.

"4. That the operation should not be attempted before the completion of the seventh month, as that is the earliest period at which the child becomes 'viable,' but that it is well to allow an additional fortnight to rectify any error in the calculation of the period of pregnancy.

"5. That 'when this operation is had recourse to, and the dimensions of the pelvis are such as to promise success, we ought to defer the attempt as near to that period fixed by nature for the full evolution of the foetus as circumstances will admit, that thereby the child may acquire every possible advantage to insure a healthy state of existence after birth.' (*James Barlow.**)

"6. 'That the practice should never be adopted till experience has decidedly proved that the mother is incapable of bearing a full grown foetus alive.' (*Merriman.†*)

"7. That as a diminution of the lateral diameter of the lower outlets, or impediments arising from immovable morbid growths, may prove insurmountable obstacles to the delivery of a full grown foetus, either may be an adequate reason for the induction of premature labour.

"8. In cases of extreme distortion, prohibiting the delivery of a 'viable' foetus entire by any means we possess, a due regard for the safety of the mother, which would be more or less compromised by the severe operations necessary at the full term of utero-gestation, may justify the adoption of this operation in the early months of pregnancy.

"9. The death of the foetus in utero at the commencement of the last month of pregnancy, certain disorders of pregnancy and dangerous uterine hæmorrhage, have been deemed a sufficient justification of this practice.

"10. The operation should neither be resolved upon, nor performed without a deliberate consultation with other members of the profession.

"11. After the operation 'the utmost care should be taken to guard against the attack of shivering and fever,' which is an occasional consequence.

"A nurse should always be in readiness to afford nourishment to the child, until the maternal secretion of milk will take place."

* *Med. and Phys. Jour.*, vol v., p. 47. *Baudelocque*, vol. ii., p. 288.

"I have lying before me a list of premature births, in which the periods of utero-gestation is distinctly marked. The list amounts to thirty-six cases, of eight months' children, and thirty-four of seven months. Of the thirty-six eight months' children, there died during the month of childbed, only eight; of the thirty-four seven months' children, there died during the month, twenty-one."—*Merriman's Synopsis of Difficult Parturition*, p. 182, note.

† *Med. and Chir. Trans.*, vol. iii., p. 142.

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *On the Structure of Erectile Tissues.*—In our Number of November, 1835, p. 179, we published a detailed account of the discoveries of Professor Müller relative to the minute structure of the penis, the substance of which was that there exists a separate series of minute arteries (which, from their form, he named *helicine*) projecting into the venous cells, and producing erection of the organ by the increased flow of blood through them, under circumstances of nervous excitement. His investigations were certainly of great importance, not only as establishing the minute structure of the organ described, but in a general point of view, as relating to a distribution of vessels to which no similar arrangement had been presumed to exist in the animal body—viz, arteries terminating with free extremities, in cells communicating with veins. We have now, however, to notice a complete refutation of the views then advanced, and since almost universally received, which has been published in the last number of Müller's *Archiv für Anatomie und Physiologie*. It is from the pen of Professor VALENTIN, the well-known author of the *Entwicklungsgeschichte*, whose talent for minute observation is certainly not inferior to that of Müller himself.

He says that the result of numerous examinations has convinced him that the so-called *helicine* arteries are by no means peculiar vessels, terminating with their extremities, and hanging free in the cells of the corpus cavernosum, but only minute arteries that have been divided or torn; and that, on the contrary, the real distribution of the vessels of the corpus cavernosum follows in every respect the most simple laws. In making the injections of the penis, different portions of it receive different quantities of injection; in general the posterior half is most injected, and of this the anterior fourth is best adapted for examination, because in it the injection will probably have exactly filled the minute arteries without passing into the venous cells. If a transverse section of a portion thus injected be made, one sees on its surface, together with arteries of various sizes running tortuously in the uninjured fibrous cord-like partitions* of the cells of the corpus cavernosum, the *helicine* arteries—that is, arteries which, to the naked eye, or with a lens, seem to terminate suddenly, either singly or in tufts, which lie partly on the fibrous cords, but principally hang loose in the cells, and which when placed in water appear fixed at one end, while the other floats out in it. They all, even to the naked eye, appear completely inclosed by a membrane exactly like the tissue of the partitions; and if they are examined with a micro-

* *Balken*, beams: the fibrous cords or bands which bound and traverse the so-called cells of the spleen.

scope, their ends appear sometimes rounded, sometimes obliquely or unevenly truncated, sometimes granular or even irregular; in a word, so inconsistent is the form of their terminations, as at once to suggest the opinion that they are unnaturally formed.

If a cleanly cut transverse section be examined with a good lens, with which a view to some little depth may be obtained, it will at once appear that there are helicine arteries only at the surface, and in the cells lying near it; but that in those cells which lie deeper, no trace of them can be seen. At the same time it may be remarked, that every fibrous cord, without exception, contains an artery of proportionate size, which runs in it tortuously, or rather in the form of a cork-screw; and that these arteries, like the fibrous cords in which they lie, communicate together. If the surface of the section be examined under water it will be seen that at the divided extremity of each fibrous partition, one or more helicine arteries seem to be given off, according as one or more smaller fibrous cords are given off together or separately from the chief one. These smaller fibres, when they were divided, had separated and contracted a little, and thus, and by their naturally winding course, the tendril-like or crozier-like terminations of the supposed helicine arteries were produced. Thus one sees how the helicine arteries are formed under one's own eyes. And wherever the minute arteries are filled with injection they may be made to appear helicine by dividing the fibrous cords in which they lie. In a longitudinal section the same thing may be observed, only that here still more partitions being divided, more helicine arteries are seen; and more still may be made by cutting the corpus cavernosum, as one would with a saw; or by washing out the injection from the cells into which it has run from the arteries, and so tearing a greater number of the extremely minute cords. By the careful examination of several of the arteries, and their fibrous cords supporting them, which are thus divided, a sufficient proof may be obtained that the apparent enlargement of their extremities, the closeness of their orifices, and their tortuous or tendril-like course, depend merely on the mode in which the section has been made, or on some artificial means employed in the examination.

In the posterior part of the corpus cavernosum in man the cells are large, and the fibrous cords traversing them very delicate, so that as all the minute arteries run tortuously on them, the helicine arteries seem to be very abundantly and evidently present. But more anteriorly, where these cells assume a more honey-comb appearance, and the fibrous partitions are more band like than cord like, and the arteries running on them are proportionally much smaller than the membranes surrounding them, the helicine appearance cannot be demonstrated. The most easy refutation of the presence of the so-called helicine arteries is found in the human species (in which it will be remembered, Müller said they could be most easily demonstrated,) and next to it, in that portion of the corpus spongiosum urethræ of the horse and ass, which immediately surrounds the urethra.—*London Medical Gazette*, June 16, 1838.

2. *On the Capillary vessels.*—These vessels examined in many parts of the body, present, according to Dr. KRAUSE of Hanover, a diameter considerably less, than that of the smallest globule of the blood. He gives the following measurement of the diameter of the most delicate capillary vessels in various parts:

In the retina	. . . . .	$\frac{1}{316}$	of a line.
choroid	. . . . .	$\frac{1}{301}$	—
pulmonary cells	. . . . .	$\frac{1}{301}$	$\frac{1}{308}$ —
intestinal follicles	. . . . .	$\frac{1}{333}$	—
muscular integument of small intestines,		$\frac{1}{116}$	—
the tibialis anticus muscle	. . . . .	$\frac{1}{116}$	—

In proportion to the capillary vessels of the ordinary diameter, (i. e. $\frac{1}{308}$ to $\frac{1}{316}$ of a line,) these very delicate ones are always fewer in number, and are generally placed intermediately between two larger branches. Krause has never found that the larger quantity of any capillary tissue was formed by these extremely

delicate vessels. The injections employed were vermilion and size, or the successive injection of a solution of neutral chromate of potassa, and acetate of lead, with some mucilage of gum arabic: the granules of chrome yellow thus formed are of a diameter of from $\frac{1}{800}$ to $\frac{1}{1000}$ of a line. The granules which remain after human blood has been macerated for two days in distilled water, (the kernels of the globules,) have a diameter of $\frac{1}{1000}$ of a line; but, on account of the feebleness with which they intercept the light, they are seen with more difficulty than some bodies of a smaller size. Contrary to this former opinion, the author is now convinced from observation that the capillary vessels have membranous parietes. *B. and F. Med. Rev.* from MÜLLER'S *Archiv. für Anat. Physiol. und Wissent. Medicin.* Heft. i. 1837.

3. *Thymus Gland.*—DR. KRAUSE opposes the notion that the thymus gland is not found after twelve years of age. He has found it in almost all individuals between twenty and thirty years; and very often larger than in young children; and he has seen it of considerable size between the ages of thirty and fifty, and has also met with the brownish red remnants of it still later in life. In younger men its form is generally cleft in two parts, as in its original condition: these are generally adherent in the middle only by cellular tissue, so that their decrease appears to commence at this part. The lower cornua never, as in children, descend to the upper part of the pericardium, but frequently extend far into the neck.

The following is the measurement of the thymus gland in some very healthy and well made individuals who had committed suicide:

Age and Sex.	Length.	Breadth.	Thickness.	Weight.		Specific grav.
				Grains.	Cubic Inches.	
25, m.	34 lines.	18-25 lines,	4 lines.	292.5	0.977	1.0352
25, m.	42 —	32 —	2-3 —	380.3	1.156	1.0311
20, m.				356.5	1.085	1.0309
28, f.	22 —	16 —	2 —	69.2	0.211	1.0267
						<i>Ibid.</i>

4. *Intestinal Glands.*—DR. KRAUSE has carefully repeated the observations of Böhm on the intestinal glands (see this Journal for November 1837, p. 218,) and is quite satisfied of their accuracy. He adds some farther investigations, chiefly respecting the size of the various follicles and cripts of the intestinal canal. He does not, however, regard the glands of Peyer as essentially different from the solitary glands in the jejunum. The manifest differences are, that the glands of Peyer are crowded together and are naked and prominent on the free surface of the mucous membrane, whilst the solitary glands are abundantly beset with follicles. Both are of the same size, between $\frac{1}{4}$ and $\frac{1}{3}$ of a line, their cavity is rather more than half the size of their external circumference, the parietes proportionally thick; the contents of both are not readily squeezed out, but its appearance is that of opaque mucus, the granules of which, flattened and irregularly rounded, are from $\frac{1}{300}$ to $\frac{1}{400}$ of a line in diameter; a size which corresponds with that of the granules of the mucus of many mucous membranes, though they are occasionally found of a larger size. But both the solitary glands and those of Peyer present a character essentially different from that of the glands of other mucous membranes, i. e. a slight roughness of the internal surface of their cavities, produced by a slight prominence of secreting cells, and a plurality of openings, whilst the glands of mucous membranes generally possess but one opening connected with their cavity. It is very rare to find but one opening to either the solitary glands or those of Peyer, the average number of their apertures being from five to ten. The openings traverse the parietes of the follicles in an oblique direction, and it is consequently difficult to assure one's self that they communicate with their cavities. The evidence of this, however, may be obtained thus: Take a large follicle of a gland of Peyer, and open its cavity by removing that half of it which is inserted into the submucous cellular tissue of

the intestine; into the little rounded hollow, which is thus rendered visible, insert a very small drop of carmine in solution. On examining the opposite part of the follicle, i. e. that which projects into the intestinal canal where the openings are situated, the red fluid will be seen to escape from these apertures before the entire follicle becomes coloured by imbibition. *Ibid.*

5. *New observations on the measure of the temperature of the organic tissues of the bodies of men and animals, by means of thermo-electric effects, by MM. BECQUEREL and BRESCHET.*—The memoir we now present to the academy is a succinct exposition of the continuation of experiments undertaken by us at Paris, and in our journeys to the Alps and Italy, for determining, in a more rigorous manner than has yet been done, the temperature of the tissues in general, and of the interior organs of man and animals, by the assistance of thermo-electric effects.

The use that we have made of the mixed metallic needles, less than a millimetre in diameter, for determining the temperature of the interior parts of organized bodies, require delicate precautions with which we have already made some persons acquainted, and without which it is not possible to obtain results, on the accuracy of which we can depend; we are now about completing what we have already said on this subject.

When one of the extremities of a metallic bar is inserted into a source of heat, which is not capable of reacting chemically on its constituent parts, this bar becomes heated, by degrees, to a greater or less distance from the inserted part, according to the nature of the metal, the dimensions of the bar, the temperature of the source, and that of the surrounding air.

Hence the different sections of the bar, above, and to a certain distance from, the source of heat, assume different temperatures higher than that of the surrounding atmosphere; but as soon as each of them attains the temperature it is to preserve, that is to say its state of equilibrium, experiment proves that for distances from the source which increase in arithmetical progression, the excesses of temperature decrease in geometrical progression, whenever the excess of the temperature of the bar over that of the surrounding medium does not exceed 20 or 30 degrees. On the other hand, the propagation of the heat varying according to the dimensions of the bar, the loss of heat being proportional to the area of the exterior surfaces, and the quantity of heat which traverses being also proportional to the area of the section, it follows, that the decrease of temperature will be as much greater as the circumference is less. Experiment effectually proves that in two bars of the same metal, not having the same transverse section, the distances of the focus from the points in which the temperature is the same, are to one another as the square roots of their thicknesses, or as the square roots of their radii if the bars be cylinders. It follows from these different observations that the smaller the diameters of the cylinders or metallic needles, the less the source of heat would become cooled when its temperature would be capable of varying by the presence of these needles; hence the necessity of operating with needles whose diameters are less than a millimetre.

It also follows, from the preceding observations, that when we seek to determine the temperature of the interior parts of a man who is about 37 degrees, we must place him in a medium whose temperature is at least 18 or 20 degrees. If this condition do not yet suffice, we must find by previous experiments, the effects due to the cooling produced in the muscles by the presence of the needles. This is a point on which, perhaps, we have not been sufficiently determined in our preceding memoirs.

The process for finding the interior temperature of the human body consists, as is known, in making use of two needles each composed of two others, one of copper and the other of steel, soldered at one of their ends. One of them is placed in a medium whose temperature remains constant during the time of the experiment, whilst the other is introduced into the part the temperature of which we wish to measure. These two needles are connected on one side, by their

steel end, with a steel wire of the same nature, and on the other, by their copper end, with the extremities of the wire of an excellent thermo-electric multiplier.

When the two soldered needles have the same temperature there is no deviation of the magnetic ones; but for the least difference in the two temperatures, be it only 0.1 of a degree, there is a deviation whose direction and extent serve to estimate correctly this difference, and consequently the temperature of one of the media, when that of the other which is constant is known.

The constant source that we usually employ is furnished either by the apparatus of M. Sorel, which has already been described, or by the mouth of a person accustomed to this kind of experimenting. Sorel's apparatus preserves for some hours, a temperature, only varying a few tenths of a degree; but the mass of water which gives it is so considerable, that the solder immersed therein is immediately put in equilibrium of temperature with it, notwithstanding the losses experienced by the parts of the needle placed on the outside, which are quickly repaired. In this case, the temperature shown by the solder is that of the medium in which it is found. It is not the same with the temperature shown by the second solder, which is found in a muscle a small distance from the skin, which muscle, by reason of the tissues of which it is composed, from their small extent and bad conductivity, ought not to be considered as an equal source of heat to the other; we also find when operating in a medium, whose temperature is below 18 or 20 degrees, a difference of the apparatus, even when the temperature of the latter is the same as that of the muscle.

By using the mouth as the source of constant heat, we have not to fear so much the differences that we have just shown, because the two sources have an analogy among themselves, with regard to their constitution.

We have entered into some details on the precautions to be taken, when we endeavour to measure the interior temperature of organized bodies, in order to enable those persons wishing to make use of our procedures to avoid the indicated causes of error.

We shall now mention the experiments we have made for showing how far the mouth may replace the apparatus for constant temperature.

Each of the solders was placed in the mouth of a young man 22 years of age, between the palate and the tongue, which exercised a slight pressure on the metallic wire, so as to avoid the variations resulting from the passage of the air breathed. The magnetic needle deviated $1\frac{1}{2}$ degrees in favour of one of the two mouths. The solders having been transferred from one mouth to the other, the deviation was 2 degrees in another direction, instead of $1\frac{1}{2}$ degree. The difference of half a degree, corresponding to one-tenth of a degree of temperature, proceeded very probably from the solders not having been placed alike in the two experiments; the effects did not vary for a quarter of an hour.

Hence we see that with certain precautions we can make use of the mouth as a source of constant temperature, when we are accustomed by previous attempts to keep the solder always in the same position, and to breathe through the nose, so as not to introduce cold air into the mouth.

One of the solders having been placed in Sorel's apparatus marking 36 degrees, the other in the mouth of a young man, the deviation of the magnetic needle was two degrees in favor of the mouth, which indicated a temperature of $36^{\circ} 40'$ instead of $36^{\circ} 50'$, shown by the thermometer; a very slight difference owing to unseen causes.

The one solder was left in the mouth as it was, and the other was placed in the biceps muscle of the second young man, the temperature of the air being 14 degrees, consequently, below what is necessary for the success of the experiments; we had a deviation of 4 degrees in favour of the mouth; hence, the temperature of the biceps given by the needle was only $36^{\circ} 20'$, instead of $36^{\circ} 60'$, which is the mean temperature we have found in our preceding memoirs.

The solder which was in the mouth, was taken out to be placed in Sorel's apparatus, which showed $33^{\circ} 50'$ by the centigrade thermometer; the deviation of the magnetic needle was 10° in favour of the apparatus; hence, the mouth possessed

a temperature of $36^{\circ} 50'$, as we have previously found it. Thus the mouth may be used with advantage as a source of constant temperature.

We have naturally been led to make some experiments on the influence of the variations of the surrounding temperature on that of the human muscles. This question, which has occupied philosophers and physiologists for some years past, is not yet completely resolved, wherefore the results that we have obtained will not be without interest for the science.

It is certain that man, as well as warm blooded animals, can live in an atmosphere which differs nearly 80 degrees in temperature from their own, since the inhabitants of the polar regions, covered it is true with clothes, are one part of the year exposed to a temperature at which mercury freezes. Hence, men as well as warm blooded animals possess in themselves the faculty of increasing in a given time the heat that they develop. As to the faculty which they have of resisting high temperatures, without any sensible disorder in the animal economy resulting, we shall refer to the experiments of Banks, Blagden, and Fordyce, who have remained exposed for some moments to a temperature of 125 degrees, without finding any sensible change in their own, estimated probably from that of the mouth.

On the other hand, Berger and De la Roche, having been exposed to a temperature of 49 degrees found theirs increased 4 degrees; and De la Roche, having remained alone in a hot-house at 90 degrees, for sixteen minutes, has proved that his was only increased 5 degrees.

Captain Parry relates, that in the polar regions, where the temperature is lower than that at which mercury freezes, that of man is not sensibly modified. This last observation is contradicted by Mr. John Davy and some others, who have found that the temperature of man increases from the poles to the equator.

Without wishing to enter into an examination of the contradictory results we have just mentioned, we shall confine ourselves to mentioning the experiments we have made on the same subject.

We introduced into the biceps muscle of the right arm of two young men, each of the solders of two perfectly similar needles; the temperature of the surrounding air was 16 degrees; the magnetic needle showed no appreciable deviation; hence, the two muscles had exactly the same temperature. One of the arms under experiment was immersed as far as the elbow, incessantly for a quarter of an hour into water, at 10, 8, 6 degrees, then at 0; the experiment lasted about an hour; the deviation of the magnetic needle was only two degrees in favour of unimmersed muscle, which indicates a diminution of temperature in the other of about the fifth of a degree.

The same arm having been afterwards plunged in water at 42 degrees for fifteen minutes, the temperature of the immersed muscle was only increased the fifth part of a degree.

These experiments having been repeated at different times, we have always found but very feeble differences in the temperature of the muscles.

These results have been confirmed by the experiments we have made at the mineral water baths at Lovech, in Valais, two years ago, and recently at Paris, with the assistance of M. Seguin, external pupil of the Hotel Dieu, at Paris, who assisted in our researches with a zeal worthy of praise. We were not contented with putting the arms in the water at an elevated temperature, but immersed the whole body therein. The waters of Lovech were 49° centigrade.

The temperature of Sorel's apparatus indicated $35^{\circ} 50'$: one of the solders was placed in it, while the other was introduced into the biceps muscles of M. Seguin; the deviation of the magnetic needle was 12 degrees in favour of the muscle, which indicated a temperature of $36^{\circ} 70'$. M. Seguin having been placed in the bath at 49 degrees, remained there twenty minutes; the deviation of the magnetic needle varied from 12 to 13 or 14 degrees according as it was more or less distant from the water. Hence the temperature of the muscles increased from one to two fifths of a degree. On coming out of the bath the devi-

ation of the magnetic needle returned to 12 degrees as it was before. M. Seguin's pulse made 112 pulsations per minute in the bath.

We obtained the same result on a vigorously constituted young Tyrolean carpenter. We were unwilling to repeat the experiments at a higher temperature, for fear of injuring the health of persons volunteering to assist in our researches. But we have recommenced them at Paris at a temperature a little lower than 49 degrees, with the assistance of M. Seguin and M. Castille, also external pupil of the Hotel Dieu. One of the solders was placed in M. Costille's mouth, the temperature of which, measured by the thermometer, was $37^{\circ} 50'$, the other in the biceps muscle of M. Seguin's right arm; the deviation of the magnetic needle was 2 degrees in favour of the mouth, which indicated a temperature of $37^{\circ} 10'$ for the muscle. Mr. Seguin was placed in a bath at $42^{\circ} 50'$ and remained there twenty minutes; the temperature of the muscle was not changed, as the deviation of the magnetic needle remained the same.

This experiment repeated on M. Castille gave the same result. We see by the facts just mentioned, that when the human body is in contact with water, whose temperature varies from 0 to 49 degrees during a space of twenty minutes, that of the muscles experiencing only feeble variations, perhaps it would be the same if the contact were prolonged for some time, as the experiments of Mr. John Davy and other philosophers lead us to believe; but it is impossible to verify this assertion, since very serious disorders in the general economy would result from it: a bath of 49 degrees already strongly reddening the skin and determining the blood to the head.

We may also conclude from some observed facts, that the results obtained by M. De la Roche, who was placed in a hot-house at a temperature of 49 degrees, are due in a great measure to the phenomena of respiration, which modify the temperature of the mouth.

We shall also relate one experiment made at Lovech, and which has not been repeated on account of the difficulties it presents. This time it was a dog on which we experimented; his muscles indicated a temperature of $38^{\circ} 50'$; plunged in a bath at 49 degrees, the needle not touching the water, the temperature of the extensor muscle increased successively from half a degree to 1, $1\frac{1}{4}$, and 2 degrees, and that in the space of five minutes. The dog became so furious that we were obliged to withdraw it from the water; after a short time the temperature of its muscle returned to what it was at first.

The solder was introduced into his chest, and we obtained equally an increase of temperature of several degrees some moments after the immersion in the bath: this increase took place chiefly when the animal was violently agitated. We are ignorant of what influence the exasperated state of the animal had on the effects that we have observed. We shall also mention a curious result, which has no relation to the preceding ones, but which will interest physiologists.

One of the solders was placed in the biceps of a young man, the other in the great supinator muscle of the left arm of a man 45 years old. The magnetic needle underwent no sensible deviation. The vein was opened, but we observed no change of temperature during, and after the loss of the blood. The solder was placed as near as possible to the vein. We may draw what conclusion we please from this fact; but the only one which appears natural to us, is that *a priori*, we ought to think that it would be thus, because the blood, whose escape was permitted by the opening of the vein, returned to the heart, and having already circulated through the capillary vessels, has become foreign to the composition of the tissues in returning to the central organ of the circulation by the branches and venous trunks. Hence it could only produce a decrease of temperature in the animal body by its abundant flowing out, and producing a weakness of the subject. We therefore thought it right to make the experiment in another way; on which account we took a middling sized dog, which had eaten a few hours before the experiment, and placed one of the solders in the muscles of the fore part of the thigh, while the solder of another needle was in the mouth of an experimenter, a bandage having first been thrown round the femoral artery, im-

mediately below the outlet of the abdomen. The suspension of the blood's course in this vessel, caused no change in the temperature of the limb, and by several repetitions we exercised or suspended the compression on the arterial trunk, without being able to observe the least motion in the needle of the multiplier.

Would it be necessary, in conclusion, that the modifications in the temperature of the tissues, depend much less on the sanguinary circulation than on the nervous influx, or even that the results of this last experiment prove that, in only tying the femoral artery, we have not stopped the whole of the blood in the vessels of the thigh, the gluteal and ischiatic arteries being able to make up for the femoral one.

In order to have a positive solution of this physiological difficulty, we have embraced the primitive iliac artery with a double silk cord; then placing one finger on the vessel at the point where the ligature bound the vessel, we could at pleasure hinder or permit the circulation of the arterial blood in the limb. The needle was then inserted into the fleshy parts of the thigh, and at the end of eighteen minutes we perceived the temperature lower about half a degree. Afterwards, permitting the blood to traverse the arterial vessels of the thigh, the temperature was soon re-established in its normal state. This experiment repeated several times gave us the same result; although the effect observed be very feeble, it shows, nevertheless, that the arterial blood exercises a direct influence over the temperature of the tissues; it is not, however, to the blood which circulates in the trunks and arterial branches that we must attribute this influence; but that which traverses the capillary plexus. In fact fifteen or twenty minutes usually elapse between the suspension of the blood's course in the limb, and the diminution of the temperature. However, the re-establishment of the temperature in its normal degree, when the blood is permitted to traverse the arteries, was always more rapid than the diminution of temperature when the trunk of the principal vessel was compressed.

We have here stated what relates to the influence of the arterial circulation over the temperature of the animal tissues; in another memoir we shall mention what experiment has taught us of the nervous influence, with regard to this same temperature of the tissues.

The facts that we have just related in this memoir, show anew what we may deduce from the thermo-electric effects, to estimate the temperature of the interior parts of man and animals; taking as a constant temperature either that of Sorel's apparatus or that of the mouth of a person accustomed to this sort of experimenting.—*Annals of Electricity, &c.* June, 1838. From *Compte Rendu des Séances de l'Académie des Sciences.* April 9, 1838.

6. *Temperature of the human body in different degrees of external heat.*—During the voyage of "La Bonite," for the purpose of making various scientific investigations, the attention of the naturalists was especially directed by the Academy to determine the temperature of man and animals in different parts of the globe. Experiments were therefore made on ten men, every day, from April, 1836, while the Bonite was at Rio Janeiro, till her arrival in France, in November, 1837, by introducing a thermometer into the rectum, and observing carefully the temperature of the surrounding atmosphere. All the men were occupied in a constant employment on board the ship, with regular diet, &c., so that no interfering agency could be present. The results obtained are, that the temperature of the human body falls very slowly during the passage from hot into cold regions; and that, on the contrary, it rises more rapidly in passing from cold countries to the torrid zone. The degree of change varied in different individuals. The average temperature of the men, observed at Cape Horn, at 59° south latitude, with an external atmospheric temperature of 0° centigrade, presents only a difference of one degree from the average observed in the same men in the Ganges, near Calcutta, with an external temperature of 40° centigrade. Thus a variation of forty degrees in external temperature gives rise to a difference of only one degree in the temperature of the human body.—*London Med. Gaz.*

May, 1838. From *Rapport sur les résultats scientifiques du Voyage de la Bonite autour du monde*, par M. DE BLAINVILLE.

7. *Excito-motory system.*—The following report of a discussion in the Physical Society, Guy's Hospital, will be read with interest, as it exhibits the views of some distinguished physiologists relative to the excito-motory system, a subject at present exciting much attention:

“Mr. Grainger stated that anatomists, up to the present day, had been in the habit of describing the spinal nerves to arise on each side by a double origin. The posterior or sentient root and the anterior presiding over motion. To these M. Hall has added another pair of roots, which he has termed respectively the incident and the reflex; the former proceeding with the sentient root and serving to convey impressions (independent of sensation) to the latter, which accompanies the motor root, and constitutes the conductor of involuntary motion.

“Sir Charles Bell's discoveries had shown that every nervous filament possessed but a single faculty, and wherever a nerve appeared to have two functions, it was necessarily made up of two sets of fibres. Dr. Hall's experiments had demonstrated, that when the brain was completely separated from the spinal cord, voluntary motion and sensation in the body were completely arrested; but upon the application of some irritation to the surface, the muscles could still be made to contract, independent both of sensation and of volition. Hence the Doctor reasoned that some chain of connection existed between the nerves of motion and perception in the spinal cord, altogether irrespective of the brain, and such as have been already alluded to. Mr. Grainger had endeavoured to verify this theory by actual dissection, and had satisfactorily demonstrated the fact, that such connection did indeed exist: for he found each root, as it arose from the spinal marrow—the anterior from the motor tract, and the posterior from the sensitive—to have also another origin deeper in the cord, from the central gray matter; whilst the original roots proceeded no further than the white medullary structure of the cord; the posterior of these origins, from the gray matter being the incident nerve, and the anterior the reflex nerve, of Dr. Hall. Thus, like the discoveries of Bell, had the more recent theory of Hall been verified by dissection.

“The idea, indeed, was not altogether original on his part, for it had been already mentioned by Gall, Bellingeri, and Mayo, that the nerves of the spine arose not from the medullary alone, but also from the cineritious part of its structure. This had not, however, been fully admitted by anatomists; and although many investigations on the subject had been made, he was not aware that the fact had been previously satisfactorily demonstrated. He was happy to add, that his dissections had been now confirmed by those of Mr. Solly.

“If these notions were correct, the quantity of brain and white part of spinal cord ought to bear a proportion to the development of sensation and volition; and that of the cineritious part should be in proportion to the development of motion and perception. And so indeed it was, this being fully verified by comparative anatomy, which showed, that in man the brain and white part of the cord preponderated largely, whilst in animals endowed with strong motive powers the cineritious part of the spinal marrow prevailed.

“Mr. Grainger illustrated these facts by reference to examples from fishes: as the *Lophius piscatorius*, and from the lower classes of the animal kingdom; as the *Annelidæ*, the common earth-worm, insects, &c., by which it entirely appeared that the persistence of muscular movement bore a decided ratio to the development of the spinal and ganglionic systems. Mr. G. concluded his remarks by expressing his conviction, that dissections in anatomy had hitherto been too coarse, and the recent labours of Kiernan, Müller, and others, gave encouragement to hope that many parts of anatomical structure were susceptible of far minuter demonstration than as yet had been applied to them.

“Dr. Marshall Hall rose in explanation of his views. In the cerebro-spinal system there were, indeed, two systems—the cerebral, containing the nerves of volition and sensation, and the spinal, which operated independently of either

to produce motion. If the brain of an animal be removed, though motion may occur, yet such motion cannot be the result of volition, nor can any motion whatever be produced without the application of some external irritation. Thus, if a snake be decapitated, and then left till it be perfectly quiescent, though it may be made to move by external stimuli, yet if left to itself no motion will be observed again, and it will remain in whatever form it may have been placed. The movements which take place upon the application of external stimuli in the coma of apoplexy, opium, &c. &c., also in the case of an animal struck down by a blow on its head, indicated that there existed some other source of contractile power besides that of the brain, and independent both of volition and sensation. Reverting now to the paper, Dr. Hall said, that experiments enough were on record to show, however much you may lacerate or tear the cerebrum, no convulsive movements will arise. It was a matter of great interest, therefore, to inquire why convulsions occurred in certain inflammatory and other conditions of that organ. With regard to the cerebellum, Serres, in speaking of an apoplexy there, and believing it to preside over the sexual passions, had prognosticated the disease from the existence of priapism. Doctor Hall did not believe this to be the function of the cerebellum: he thought the priapism might be explained upon the supposition that the clot pressed upon and irritated the adjacent medulla oblongata, the source of muscular movement—as in the guinea-pig, irritation of that part immediately produced a seminal emission. To apply this physiology of the excito-motory nerves, the Doctor adduced the case of the crowing inspiration of infants, which always depended upon one of three causes—dentition, constipation, crudities in the stomach. Removing the cause of irritation invariably relieved the crowing; in this affection the brain being only secondarily affected, and becoming diseased finally, because every convulsion renewed congestion there, and this ultimately gave rise to disease.

“Mr. Brereton agreed with Dr. Hall in some points, but differed with him in others. He was not satisfied that sensation was not essential to the production of motion, for although the brain be removed, it had not yet been proved that sensation did not also reside in the spinal cord. In several cases of paraplegia, and various forms of palsy, in the hospital, he had lately endeavoured to excite motion by tickling, pinching, stabbing with a pen-knife the affected limb, &c. &c., but he had altogether failed in producing the result stated by Dr. Hall. An acephalous fœtus had been known to cry; this Mr. Brereton did not comprehend, for crying presupposes a sensation of something unpleasant, a certain exercise of the will. He agreed in the opinion that the cerebellum did not preside over the sexual appetites. With regard to the crowing of children, Dr. Hall had mentioned but three causes. Dr. Hugh Ley, however, has described a fourth, viz. tumours in the neck pressing upon the par vagum.

“Dr. Hall replied, he thought there must be some error of observation in the experiments made by Mr. Brereton upon the paralytic patients, for it was quite proved that convulsion of a paralysed limb could be produced in the way he had stated. There was now a patient in the ‘Dreadnought,’ under Dr. Budd, completely paralysed; tickling the soles threw the limbs into strong movements, and passing the catheter occasioned priapism. With regard to the acephalous fœtus, there is but one case of crying recorded; it is by Ollivier, and the word used is ‘*crier*.’ This does not necessarily signify crying; it may mean a hiccup, or any noise in the air-passages. He differed altogether with Dr. Hugh Ley about the crowing in children, and did not believe that pressure on the pneumogastric nerves could occasion crowing; any pressure there caused stupefaction, as in excessive drunkenness, coma, dyspnoea, &c.; and in a case of the kind at the Salisbury Infirmary, Mr. Sampson had saved life by a well-judged operation of tracheotomy.

“Mr. Aston Key suggested whether, in the case of paralysis where Mr. Brereton had failed in exciting motion, the injury or disease of the cord had been low down, at the end nearly of all the cineritious matter: might not this be sufficient to account for the failure?

“Mr. B. Cooper said it was the same thing physiologically, whether the

injury was in the spinal cord or in the cauda equina; which depended upon and arose from the spinal cord.

“Mr. Brereton.—One patient had fracture of dorsal vertebra. A catheter was always in the bladder, but there was no priapism, and no movement was caused by pinching or blistering. Another had injury just below the head: here, too, he had failed in his experiments. On looking over the old museum-books of Guy's, Mr. B. had found there was once a patient, under Mr. Morgan, with injury at the sixth cervical vertebra. There was at first (as is usual) paralysis of the parts below the seat of injury. After a time, however, (some days,) the arms also gradually lost all power. He would ask Dr. Hall whether he knew of other cases where disease in this way seemed to affect parts above the seat of injury; and whether any analagous result could be produced in experiment by the agency of the excito-motory nerves.

“Mr. Golding Bird stated, that he had electrified many paralysed patients in the hospital, and, in every instance, contortions of the limbs were produced by the electricity.

“Dr. Hall had no information upon the question last put by Mr. Brereton: it was extremely interesting, and he had often thought of it; but he had never seen, or before heard of, any case bearing upon it. Mr. Bird's fact about electric fluid proved nothing; for electricity, or galvanism, acts directly on the muscular fibre, and not through the agency of the nerves.

“Dr. Bright expressed his gratification at the very complete manner in which the excito-motory theory had been verified by dissection. The Doctor related a case which he had seen with Mr. A. Key, where perfect paralysis of the lower extremities existed, and in which violent convulsive movements could be produced by tickling the foot. He believed some explanation might be found for the failures experienced by Mr. Brereton: he did not think they were to be looked upon as militating against the excito-motory theory.

“Mr. Grainger said that he believed Mr. Brereton's failures might be accounted for by the fact that the excito-motory influence was differently diffused (as regarded intensity) in different parts of the limbs; nature, who gave nothing in vain, had not afforded the excito-motory influence to parts that did not stand in need of it. Thus, though many parts of the leg were incapable of rendering involuntary contraction from irritation, yet the sole of the foot would at once yield the phenomenon. Mr. Verrall had made experiments upon a case under his care, showing this very completely. Mr. Grainger concluded by adducing illustrations on this point from comparative anatomy.”

At the subsequent meeting of the society, Mr. Molloy stated, in reference to a case in the Dreadnought, quoted by Dr. M. Hall, that since the last meeting, he had visited the patient “in company with Mr. Edge, and had found that complete paralysis did not exist; for motion and sensation, to a limited degree, remained. In another case which had also been quoted, although there was complete paralysis of motion, yet sensation was not destroyed.

“Mr. Hilton said that his dissections did not coincide with those of Mr. Grainger. Mr. Grainger had described both the anterior and posterior roots of the spinal nerves to arise from the *middle lateral* column of the spinal marrow, and not at all either from the anterior and posterior columns. Mr. Hilton wished to reserve a minute statement of his own observations for another occasion, and would at present content himself with merely saying that he had traced both to the anterior and posterior columns. With regard to the excito-motory experiments of Dr. Hall and Mr. Grainger, there existed, he thought, one source of error—viz. that the sympathetic system of nerves had never been removed from the sphere of operation; and it was therefore difficult to say how much of the results obtained by these gentlemen might be assigned to these nerves. For the last six years, he (Mr. Hilton) had been in the habit of describing, in his public demonstrations of the nervous system, at this school, the various muscles of the body, and the integument immediately covering those muscles, as being supplied by the same set of nervous filaments. So that when an irritation was applied to the surface by means of those nerves, it immediately excited the muscles con-

nected with that part of the skin to contract. This was done instantaneously, and for an appreciable moment of time before the exercise of volition.

"He thought that pathology generally bore out the views of Foville, who connected the thalami with the upper, and the corpora striata with the lower, extremities of the opposite side; and the difficulty which appeared occasionally to occur, seemed to him to be often explicable, as follows:—The nervous power is conveyed from both these bodies to the respective limbs downwards, along the crura cerebri. Now if the lesion existed in the thalamus, or in the crus cerebri below it, the chain of connection between the corpus striatum and the lower extremity was cut off as effectually as if the lesion had been seated in that body itself.

"Dr. Whiting said, there were abundant facts in pathology and in physiology to show that muscular contractions could occur independent of volition—as in tetanus, sneezing, coughing, &c. But many paralysed cases had fallen under his observation, in which the excito-motory influence, as described by Dr. Hall, could not be made to operate.

"Dr. Marshall Hall said that one positive fact was of more value than a thousand negative ones, and that the latter by no means invalidated the general rule. The failure of excito-motory influence in these negative cases, might, in some instances, be accounted for by the circumstance of some disease or failure in the nerve between the spine and the irritated surface. Several years ago he had noted the fact, which he could not then explain, that if a frog be decapitated, and its spinal cord be afterwards divided in the middle of the back, upon irritating the posterior extremity it became immediately convulsed. Not so in the toad, treated in a like manner. He now knew, by the aid of anatomy, that in the latter the cauda equina commences very high in the back, and was divided in the experiment. In the former, the spinal cord was cut through.

"Mr. Key supported the view taken by Dr. Hall, and quoted cases in which paralysed limbs moved powerfully when touched or irritated."—*London Medical Gazette*, April, 1838.

8. *Case of Partial Ectopia Cordis and Umbilical Hernia.*—In our No. for February 1833, will be found an interesting account, by Dr. Thomas Robinson, an eminent physician of Petersburg, Virginia, of an infant in whom a portion of the anterior parietes of the thorax and abdomen were deficient, by which the heart was exposed to examination both by sight and touch, and its actions could be inspected. A similar case has recently been communicated to the Provincial Medical and Surgical Association, by Dr. JOHN O'BRIEN, of Bristol, and is published in the sixth volume of their Transactions.

This case is so important in its bearings on some disputed points in physiology, that we give the details of it in full. It will be observed, that the observations of Dr. O'Brien are entirely confirmatory in several important particulars of those of Dr. Robinson—as respects the active dilating power of the heart, the suddenness of its systole, &c.—and in opposition to the views of most physiologists.

"A child, æt. 14 days, presented the following appearances:—She is healthy, large, and was born at full term; colour of the face and skin perfectly natural; she takes the breast well, and sleeps quietly. The secretions and excretions are normal. The head is raised from the chest at each systole of the heart, which occurs 140 times per minute; inspirations 45 per minute whilst the little patient is asleep; the dyspnœa is much lessened when she lies on her back with her head on a level with her body. The shape and outward form of the thorax is perfect, with the exception of the greater part, if not the whole, of the ensiform cartilage, which is wanting. The functions of the cerebro-spinal system is apparently normal.

"At the anterior and superior part of the abdomen, between where the umbilicus and the lower end of the sternum ought to be, exists a tumour, soft, oval, unequal, and semi-transparent, three inches and a half in length, two and a quarter in breadth, and one and a half (at a medium) above the level of the pari-

etes. The inferior three quarters of this tumour is evidently occupied by the floating viscera, which have escaped for want of the support of the linea alba, and of the oblique, the transverse and recti muscles, the superior portion only of the last being I think wanting. The skin covering this inferior section of the tumour is reddish and shining, being evidently of late formation; on the left side of it is an ulceration about the size of a half-crown, where the cord was inserted. Around the base of the tumour, particularly the superior portion, where the integuments of the body meet those of the hernia, there is a raphé, which, with the appearance of the skin, shows that the abdominal cavity remained open to a late period of utero-gestation.

"The superior quarter of the tumour has a triangular shape, bounded laterally by the cartilages of the false ribs, and inferiorly by what appears to be the transverse colon. In this triangle, which is exactly in the median line, is seen through the diaphanous skin, a body pulsating in shape and appearance not unlike a small heart, with its point directed outwards, thus forming nearly a right angle with the sternum, its apex being pushed upwards by the distended colon; but when the intestines are not so distended, the angle becomes a very obtuse one.

"The blood-vessels ramifying on this body were easily recognised through the delicate and almost transparent skin, which became injected and of a dusky tinge whenever the infant forced down or retained her breath. Three distinct motions or actions were evident, I believe, to almost every person who examined the tumour, and they were not a few, and amongst them Dr. Charles Williams of London.

"First.—A lessening in size and a contracting of its whole body one hundred and forty times per minute, during which a dimple was formed on its side, varying in depth according as it emptied itself of the whole or only a part of its contents; the depth was always increased when the infant took a deep inspiration and was very quiet, as in sleep. This contracting or systole commenced suddenly, and diminished considerably the size of the body; after repeated observation, and the most attentive examination, this first motion appeared to be synchronous with the pulse in the carotid, and with the first or ventricular sound.

"Second movement—or that of dilatation, during which its body became tense, and appeared shortened, while, at the same time, it was much enlarged by as active a force as that of contraction, (it was dilated even when, by *pressure*, we attempted to prevent it,) whilst in the fingers, it gave me, as well as many of my medical brethren, a sensation as if it were first *forcibly* enlarged, and that then a fluid rushed in, with one wave, communicating the feeling of a thrill. The dilatation was synchronous with the second or loud *sound*, but it appeared to *continue after it*.

"During the systole, the third or downward movement of the whole tumour was observed to take place, (it certainly commenced rather before than after the systole,) evidently distinct from that caused by irregular periods, by the contraction of the diaphragm, as well as by deep inspiration. To make this motion more evident, I pushed the pulsating body into the thorax, where it required a considerable force to retain it, as *during each* systole it was forced down against my fingers, pushing them forwards, and this with a more equal power each time, when the pulse was regular and full, than when it beat one strong, followed by two or three small pulsations; the same was observed to take place in the tumour, and I think this is easily explained, by supposing that the ventricle emptied itself during the first, and only partially *during the three* succeeding pulsations.

"From the loud noise, or that caused by the reaction of the arteries on the blood expanding the semilunar valve, to the *duller* or that called ventricular, the space of time appeared to be about one half of the whole time of the heart's action, if any thing, rather more, as observed by the eye, but the movements were so quick that I shall not attempt to advance any thing positively as to the exact quantity of time occupied by each motion separately; the period of rest was all but imperceptible, indeed it appeared inseparable from the dilating, but

more especially the filling of the ventricles, or that period when the thrill was felt.

"Taking the tumour in the fingers of one hand, and passing those of the other under and behind it, they came into contact with a large round body within the thorax, (the skin was so lax, it permitted this to be done with facility,) whose pulsations were synchronous with those of the tumour. This same body was also felt in front, and might have been mistaken for the pulmonary artery.

"Handling the tumour, or touching the body within the thorax, did not appear to give rise to the slightest sensation on the part of the little patient, in this agreeing with the case of the celebrated Harvey. There was evidently no hernia of the abdominal viscera *into the thorax*, and *vice versa*: nor, on the other hand, was there any hernia of the thoracic viscera into the abdomen.

"The chest sounded well, being clear over that spot where the impulse is generally felt, but I was prevented by circumstances, viz: the age, the dyspnoea, &c., from deriving more accurate information from this source of diagnosis. The respiration was natural for an infant, and evident in the precordial region, showing that a portion of lung occupied that region. The sounds of the heart were clear and distinct in the precordia, rather anteriorly; but they were evident over the whole thorax, accompanied by *no impulse*, or any abdominal noise.

"In the lower portion of the abdominal tumour, which became much distended whenever the child cried or forced downwards, the vermicular action of the small intestines was very distinct.

"Sept. 28. The pulsating body has increased in size, and the skin covering the tumour is quite white; the ulceration entirely healed; the patient has had one convulsion.

"Oct. 1. The infant has taken cold, and become much emaciated the last two days. Convulsions occur more frequently to-day, pulse not to be counted, respiration increased to 53 per minute, a general mucous rattle over the chest; the colour of the face remains unchanged, though expressive of great anxiety.

"5. The lips have become slightly blue, she is apparently sinking, has had two convulsions to-day, and vomited some matter streaked with florid blood. She died a few hours after without a struggle, being then three months old.

"*Post-mortem examination two days after death.*—An incision was made through the skin from the top of the sternum to the pubes; while dissecting back the skin, not a trace of a muscular fibre could be discovered over the superior part of the tumour, neither the recti, the oblique or transversalis muscles, nor the linea alba. The transverse colon appeared the instant the skin was divided, forming the base of the triangle described in the history of the case; the cartilages of the ribs were perfect; the sternum was perhaps a little shorter than natural; and the ensiform cartilage was entirely wanting. The liver was very large even for an infant three months old, extending quite across the abdomen; with this exception, all below the diaphragm was normal. This muscle was itself normal, with the exception of the band or bundle of muscular fibres which attaches it to the ensiform cartilage. Its usual attachment to the posterior face of the cartilages of the false ribs continued, as is natural, but the ensiform cartilage being absent, it passed from one cartilage to the opposite one without its proper support in this place. The consequence of this was, that a triangular opening, formed laterally by the cartilages, and inferiorly by the falling and floating portion of the diaphragm, remained, close to that spot where the pericardium adheres to that muscle, and to the anterior mediastinum in front.

"The sternum being now raised, we discovered the heart in the pericardium nearly in its natural position, rather towards the right, its base occupying the left side of the thorax, and overlapped by the lung. The right ventricle was hypertrophied, being double the thickness of the left, with some dilatation, and its apex was directed to the right side. The left was of its ordinary thickness, lying from left to right, and prolonged for about one inch and three quarters, into a sac formed of the pericardium, which with the sac protruded through the triangle above described, the prolonged portion forming, when in place, an obtuse angle with the remainder of the ventricle. The apex of the right ventricle pre-

vented the left coming further out. When we opened the pericardium, we observed that it was attached by old adhesions to the protruded portion of the ventricle. The anatomical formation of the heart was normal; the blood was fluid, and the heart contained no clot; the substance of the lungs was healthy and well inflated, and the hypertrophy of the right ventricle explained the congestion of the bronchial mucous membrane as well as the expectorations of fluid blood.

"It appears to me that the following conclusions may be drawn from this very interesting observation:—

"1st. It seems probable that the prolongation of the left ventricle was caused in consequence of the pre-existence of the triangular opening, as the action of the heart continually tended to force it against and through the aperture, and that the adhesions retained it there.

"2ndly. That in the production of the impulse, no account has hitherto been taken of the downward motion of the heart, produced, as I believe it to be, by two causes. The first of these is the sudden rush of blood from the distended auricle into the dilated ventricle sufficient to fill it, which must produce some degree of downward impulse to the heart; but if M. Bouillaud's opinion of the injecting powers of the auricles be correct, then it must be of some amount. The second is the recoil or rebounding force of the heart when the ventricles have driven a column of blood into the aorta and pulmonary artery. Unite these two forces, and I believe they tend to increase, if not partly to produce, the impulse.

"Let us see if pathology does not bear out this view. When the ventriculo-arterial orifices are obstructed, or when there is hypertrophy, either eccentric or concentric, the impulse is increased in proportion to the obstruction and to the power of the muscle, the rebound being equal to the force exerted by the ventricles to expel the column of blood. Does not this solve the question of increased impulse; and that, too, in proportion to the disease? The received opinion of the present day is, that the impulse is caused simply by the systole straightening the anterior convexity of the ventricles, and thus bringing the apex into forcible contact with the ribs. It seems to me, if to this be added the above two forces, the impulse, or rather its cause, would be better explained. Perhaps also the *direction* in which these forces act might still more *perfectly* explain it.

"3dly. That the dilatation of the ventricles is as active a force as the contraction. Dr. Copeland supported this opinion many years since, and still, I believe, adheres to it.

"4thly. That dilatation is the cause of the gush of blood from the auricles, not its effect; that acting, as in this case it appeared to do, upon the principle of the common pump, it tended to carry on and explain the circulation in the large veins and through their valves, to extend the effect of the same principle to their minute divisions. Hamberger and Dr. Copeland fully concur in the first part of the above conclusion, and M. Bouillaud's opinion nearly agrees with this inference, only that he attributes an injecting power to the auricles.

"5thly. That no sound was produced by the contraction of that portion of the left ventricle, isolated as it was from the remainder of the heart, the sounds appearing to proceed from the neighbourhood of the valves. I merely here state what were the ideas excited in me and in many of my medical brethren who saw the little patient, after very frequent and most attentive examination. This conclusion is, I know, in contradiction to that come to by the Committee of the British Association, who decided that the first sound is caused by the muscular contraction of the ventricles. If this were the case, is it not probable that this isolated portion of the ventricle would have caused some sound? When taken in the fingers, and even held alternately under the stethoscope, and to the ear, a transmitted sound was heard, but no direct one, except that caused by the friction of the body against the instrument."

PATHOLOGICAL ANATOMY AND GENERAL PATHOLOGY.

9. *Expulsion of a portion of Intestine by the Rectum.*—About three years ago (1835), Dr. VULPES presented to the Medico Chirurgical Academy of Naples a loop of the small intestines, 36 inches long, discharged by a woman per anum, after an attack of ileus, and at the same time exhibited the patient, who had entirely recovered her health. Recently Dr. V. has communicated to the same body an account of the dissection of the subject of that case; she having died of enteritis, the latter end of December, 1837.

On opening her abdomen there was found in it two pints of sero-purulent fluid. The gall-bladder and the neighbouring portion of the colon had become adherent together. Twenty-seven inches below the pylorus, was seen the adhesion between the two portions of intestine, the intervening portion of which had been removed some years before. These two portions adhered by their peritoneal surfaces, and the canal was thus rendered continuous. The jejunum was enlarged and its parietes thickened; this hypertrophy was particularly remarkable at a spot 24 inches above the cicatrice; there the intestine was two inches in diameter, whilst in its normal state it is at most but one inch. The total length of the intestines was 12 feet 3½ inches. If to this we add the 36 inches of intestine discharged per anum, we have a total length of 15 feet 3½ inches, which is nearly that of the small intestines of an adult in the normal state. The canal at the point of union of the two portions of intestine was very narrow, and the portion of jejunum above the cicatrix was so dilated and thickened that it resembled a second stomach; its muscular fibres were more marked than those of the œsophagus.

This case is interesting in a physiological, pathological and practical point of view. The mode of adhesion of the two portions of invaginated intestine shows the indication to be fulfilled when enteroraphy is required: the serous membrane of one portion was united to the serous membrane of the other, and this is just what Mr. Jobert has recommended in operations of this character.—*Gaz. Med. de Paris from Observat. Med. di Napoli.*

A number of cases are on record in which a portion of the cylinder of the intestinal canal, comprising all its coats, has been discharged per anum, without the continuity of the canal being destroyed. In Nos. 125 and 127, (Oct. 1835, and April, 1836,) of the *Edinburgh Med. and Surg. Journal*, Dr. Wm. Thomson has collected abstracts of 43 cases of this kind.

10. *Hæmorrhagic constitution.*—A remarkable example of this presented some time since, in the wards of M. Lisfranc, in a man who was subject every spring and autumn to spontaneous hæmorrhage from the gums and nasal fossæ, which reduced him to the last stage of prostration. This man had seven brothers, all of whom had died from this same affection; and one of his uncles had died from hæmorrhage resulting from the extraction of a tooth. This man for a considerable time seemed at the verge of death, but by the action of styptics he recovered from the attack.—*Journ. des Connaiss. Med. Chirurg.* Aug. 1837.

11. *Researches on the diseases of Old Persons.* By M. PRUS.—The following abstract of a report, made by M. Perry, to the Academy of Medicine of France, at their meeting of the 24th of April last, on a memoir by M. Prus on the diseases of old persons, will be read with interest.

The first point which Mr. Prus endeavours to determine is, what are the diseases most fatal to old persons?

To solve this question he has carefully examined, for three consecutive years, the bodies of 430 patients who died under his care at Bicêtre.* Of these 430, 40 being cases of persons under 60 years of age must be excluded; the remaining

* This hospital is exclusively devoted to the reception of old men and insane men.

390 consisting of persons between the ages of 60 and 90 are alone to be considered.

Mr. Prus arranges these 390 old persons in the following order :

149 died of diseases of the respiratory organs.

101 of diseases of the nervous system.

64 of diseases of the circulating system.

49 of diseases of the digestive organs.

8 of diseases of the liver.

19 of various disorders.

A simple glance at the above table serves to show how false is the notion generally entertained that diseases of the abdomen are the most frequent amongst old people; while they must be ranked in frequency next to those of the respiratory and nervous systems.

The frequency and gravity of organic lesions naturally leads to the question of mortality, which, as might be expected, is very great in an old persons' hospital. Of 1345 patients treated by M. Prus, during three years, he lost 430; but, as has been noticed already, 270 of these patients had not reached the age of 60; hence the mortality of those above 60 years of age, was 390 in 1075, viz.

	Deaths.	Cures.	Total.
From 60 to 64 . . .	22	58	80
65 to 70 . . .	56	133	189
70 to 75 . . .	107	221	328
75 to 80 . . .	123	157	280
80 to 85 . . .	61	84	145
85 to 90 . . .	20	19	39
Above 90 . . .	1	3	4
	<hr/> 390	<hr/> 685	<hr/> 1075

Of the patients which were cured,

216 were treated for disorders of the respiratory organs.

151 for disorders of the nervous centres.

144 for disorders of the digestive organs.

54 for disorders of the circulating system.

22 for skin diseases.

98 for various disorders.

M. Prus concludes his memoir by some considerations on the general pathology of old people. The physician who is in the habit of treating old persons, is, above all things, struck with the absence of reaction in the diseased organ or system. The lung may pass into a state of gray induration, the stomach may become cancerous, without any of the symptoms being developed, which announce their existence in the adult. Even, as Bichat has remarked, an old man may continue to live with a disease of the heart which would quickly kill a young person or an adult. Another remark which deserves attention is the state of isolation of organs in the old person; the consent and sympathy of other organs with the diseased one is not observed in aged people.—*Gazette Médicale de Paris*, April 28, 1838.

12. *Hypertrophy of the Brain in a Child.*—The following interesting case has been recorded in *Siebold's Journal*, (Vol. XVII, for 1838,) by Dr. SCHUPMAN.

A child, about 12 months old, was born in the year 1831, of healthy parents. The labour was difficult and lasted four days. When three months of age the child was given to be nursed from home, and remained well for five or six weeks, but was at the expiration of that time suddenly seized with convulsions, which recurred frequently, and assumed an epileptic appearance. It was at this period that the author was called in, who found the infant labouring under the following symptoms.

The head was remarkably large in proportion to the rest of the body; its tem-

perature did not seem higher than that of any other part. The fontanelles were still widely apart, even more so than in a new-born child, and most of the sutures were separated by an interval of two lines from each other. The other parts of the body were well formed; the appetite good; excretions normally performed; the child slept well and quietly.

From the above symptoms the author concluded that the little patient was affected with chronic hydrocephalus, and on this supposition gave calomel in combination with the flowers of zinc. The use of those remedies was not attended with any benefit; the size of the head continued to increase; the face became of a sickly pale colour; the child lost flesh, but in other respects appeared well. A scrofulous swelling now appeared in the region of the neck, and soon terminated in an abscess which discharged a quantity of thin pus, mixed with blood. This healed under the ordinary applications; but shortly afterwards the child died in a fit of convulsions.

Necropsy 36 hours after death.—The points occupied by the fontanelles appeared much fallen in, although up to the moment of the child's death they were on a level with the rest of the cranium. The bones of the skull were thin, soft, and much injected. The dura mater appeared to be somewhat harder, thicker, and redder than in the normal state; the other membranes were healthy; there was no extravasation of blood on the membranes or surface of the brain.

On dividing the nervous substance, the medullary portion appeared considerably injected, and somewhat softened; the septum lucidum was excessively soft, as was also the corpus callosum. The lateral ventricles contained a very insignificant quantity of fluid; the plexus choroides normal; the pons varolii extremely hard. The state of the cerebellum was exactly similar to that of the cerebrum; its medullary substance being somewhat softened. But the most striking circumstance was the size of the brain, which became apparent the moment the cranium was opened; the convolutions on the upper surface of the brain were remarkably enlarged and developed, and the weight of the brain was above two pounds and a half. The quantity of water in the ventricles was in this case so excessively small that I am forced to regard it as an example of hypertrophy, combined with softening of the central parts.

MATERIA MEDICA AND GENERAL THERAPEUTICS.

13. *On the employment of the oil of the liver of the Ray and Cod.*—The *Bulletin Medical Belge* of January last contains a memoir on this subject, presented to the Society of the Medical and Natural Sciences of Brussels, by Dr. GOUZÉE, and also a report on the same by a committee of the society.

It appears that many German physicians attach great value to the cod liver oil, and boast of its efficacy particularly in rickets, white swellings, and caries of scrofulous subjects; and also in chronic rheumatism. This article has been long a popular remedy, in the north of Europe, for these diseases, and the success obtained with it by empirics has awakened the attention to it of Michaelis, Percival and Marino, Bredfeld, Schülte, Schenck, Schmidt, Kolkman, Taufflied, Carron du Villards, &c.

Dr. Gouzée says he has employed himself the ray's liver oil in many cases of rickets and always with advantage; two cases are related by him in his memoir in which the results, if attributable to the medicine, were really surprising.

Dr. Gouzée also adduces a case of white swelling, and another of chronic arthritis, in which the remedy seems to have been equally productive of benefit.

Dr. Gouzée has likewise employed the article in a case of white swelling of the elbow in a girl ten years of age, and in a case of chronic articular rheumatism in a soldier, in both with entire success. He has also used it in other affections, but without such marked advantage. He proposes to try it in tubercular phthisis occurring in scrofulous and rachitic persons.

The oil used by Dr. Gouzée is obtained from the liver of the *Raya pasticina*, Linn.; it also, he thinks, is procured from the *Gadus merluccius*, Linn., but this

latter oil cannot be had at Antwerp, and he does not know whether the latter is as efficacious as the former.

The oil is prepared during the heat of summer by exposing the vesicles containing the oil to the sun. The oil which swims is decanted, and this operation is several times repeated in order to obtain the oil clear and pure.

The residuum is used as a liniment, and is considered efficacious in articular swellings, pains, wounds, &c.

The pure oil has been found by M. Hausmann and also by Hopfer to contain a small portion of iodine.

Dr. Gouzée gives it in doses of a teaspoonful to children, and a tablespoonful to adults, night and morning, gradually augmenting the dose to double the quantity.

14. *Effects of swallowing nearly an ounce of Calomel.*—The following case, related by Mr. H. P. ROBERTS, exhibiting the effects of swallowing a very large quantity of calomel, is worthy of being placed on record with all its details:

“Miss H., a healthy girl, 19 years of age, feeling languid and rather feverish, took, at 11 o'clock on Monday morning, two teaspoonfuls of what she supposed to be magnesia, but what was afterwards found to be calomel,* in half a teacupful of milk; taking care to rinse out the cup, so as to swallow within a few grains of the whole. The mistake was not discovered till 1 o'clock, when I was called in to see her; of course she was in a state of considerable agitation. After soothing her by assuring her she was likely to do well, and giving her half a drachm of pulv. ipecac., I began to inquire more particularly into her sensations: she observed, that on swallowing the calomel she had remarked something peculiar in the taste of it; no symptoms had, however, appeared, except slight nausea and faintness, which had not prevented her from partaking of a luncheon of bread and salad, with a little ale. Ten minutes having elapsed in these inquiries, during which she had drunk a tumbler of warm water, and, vomiting not having ensued, I repeated the pulv. ipecac., which was scarcely swallowed before copious vomiting followed. On examining the egesta, by letting it stand quiet to settle, and then pouring off the upper part, and testing the sediment with lime water, I could detect no traces of the calomel. I now gave her half a tumbler of lime water, mixed with an equal quantity of warm water, every three or four minutes, and she vomited seven times in the course of the next half hour: every thing she had eaten since taking the calomel came off her stomach; still, however, there were only slight evidences of the calomel—a few blackish specks here and there: She now complained of a weight and pain at the epigastrium, and in the right side; a few minutes afterwards she brought off a thick ropy stuff, consisting almost entirely of undecomposed calomel, entangled in a quantity of mucus. I should suppose, on a rough calculation, that there must have been at least an ounce of calomel. The patient expressed herself relieved from the pain and weight; and, as I believed the most formidable part of the enemy was expelled, I considered it the mildest course to be contented with neutralising the remainder, and purging it from the bowels. My patient was undressed and put to bed, and vomiting did not recur, and (2 o'clock) the following mixture was prescribed:—

“℞ Magnesie Calcin. ℥ij.; Magnes. Sulph. ℥iss.; Sp. Ammon. Arom. ℥ij.; Liq. Calcis. ℥xiv. M. Cap. coch. iij. amp. quaque semihorâ.

“At 4 o'clock she was complaining of slight headache; her pulse was full, hard, and about 90. She had not vomited since I last saw her, and had been lying quiet; half the mixture was taken, but the bowels had not been opened. She was directed to continue the mixture, and to take frequent draughts of milk and water to allay thirst, which was urgent.

“I saw her again at 8 o'clock; the whole of the mixture was consumed, and her bowels had been opened four times between 5 and 6 o'clock; the stools had unluckily been thrown away, but I was informed that when the chamber utensil

* It had been purchased at Apothecaries' Hall.

was emptied, a quantity of black particles, similar to those which the attendants had observed precipitated from the vomited matters when I poured lime water over them, were seen adhering to the bottom of it. She was now suffering from severe griping pains, which had come on within the last half hour, and there was some tenderness of the abdomen; the pulse was 100, small and hard; the tongue had a narrow streak of fur down the centre. She had vomited once at 5 o'clock, simply the milk and water she had been drinking, without any appearance of calomel. The following mixture was prescribed:—

“R. *Misturæ Cetacei*, ℥xij.; *Vini Ipecac.* ℥iss.; *Tinct. Hyosciam.* ℥ijj. *M. Cap. coch.* ij. amp. omni horâ.

“10½ o'clock.—Has vomited twice after each dose of the mixture; is relieved from the griping, but has yet some tenderness of the abdomen.

“To omit the medicine for a little while, and then resume it.

“Tuesday morning.—The mixture has not made her sick since the last report; has very little abdominal tenderness. The bowels have been opened once; the stool was watery, green, and small, without any admixture of the black matter noticed yesterday evening; has some headache; tongue thinly coated; pulse 90, small and hard; has no appetite whatever; is teased with a frequent tenesmus, and complains of soreness round the fundament. Slept during the night from three till eight, and is disposed to sleep at the present time.

“To have a little arrow root or mutton broth according to inclination. Rep. *Mistura* 2da quâque horâ.

“In the evening she was sitting up, free from all complaint, except a little pain or heaviness across the forehead, languor, some slight tenderness of the abdomen on firm pressure, and an uneasy sensation on gnashing the teeth. Has had two stools of a dark green colour, and accompanied with some griping pain.

“Wednesday.—Appears quite well; says she had an unpleasant taste in the mouth on first awaking in the morning, but the gums are not in the slightest degree affected; has a good appetite.

“My patient called on me this morning, (Friday,) and I cannot remark any effects from the calomel; she says her health is as good as it was previously.”
—*London Med. Gaz.* July, 1838.

15. *Efficacy of Aconite in the cure of Rheumatism.* By G. G. SIMOND, M. D.—(Extracted from his Lectures on Materia Medica and Therapeutics.) From all that has been written by a vast number of men of great practice, of watchful mind, and of the most unquestionable integrity, aconite is one of the most important therapeutic agents in certain states of rheumatism. I have had occasion to tell you that, in the very early stage of acute rheumatism, when the patient has just been seized, and where the muscular system only suffers, Dover's powder is an invaluable agent, if blood-letting has not been the first remedy, which it very often is, and that it may be considered a specific; but when the joints are tumefied, when they are painful, and the suffering is aggravated by the slightest touch—when the swelling is diffused and elastic, and the skin is intensely hot, aconite is the most serviceable remedy with which we are acquainted. It is, sometimes extraordinary, when not only the sub-cutaneous and deeply cellular tissue are affected, but even the cartilages of the knee-joint, the periosteum, and the articulating capsules are evidently the seat of rheumatic inflammation, how speedily pain is relieved, and health restored, by the administration of this agent, which Dr. Lombard has reason to consider acts specifically, and great praise is due to him for the revival of a practice which had obtained, in former days, the sanction of the greatest authorities of the continental schools. In gout its efficacy does not seem less decided.

In all the various seats of rheumatic inflammation, whether the disease have been of long or short duration, however great the agony which has been expressed, however incapable the limbs have been of bearing the slightest motion, aconite has been acknowledged to have proved of the most decided service; the testimonies in its favour are so numerous, that I have felt surprised that, in this country, it has not been a favourite; and I can only attribute it to the want of a

good supply for the use of the practitioner, and, certainly, the carelessness with which the herbalist has treated this remedy, has been sufficient to prevent its more frequent employment. It was not Stoerck alone who praised aconite; we find not only the German physicians, but the Swedish medical men, loud in extolling its merits, and they are generally slow, but right, in the conclusions to which they come. Rosenstein gave an interesting narrative of a young female who suffered almost martyrdom from rheumatism in the hip-joint, for no less a period than eight months, but who within two weeks from the trial of this remedy, was restored to health. Blom and Odhelius, in few words, express their satisfaction on employing it at the hospital in Stockholm. Ribe has narrated an interesting case of a female who, besides suffering the most intense agony, and perfect incapability of moving her arms, had her muscles contracted and hardened, so that they almost wore the appearance of ivory.

There are many foreign writers who have added testimonials in favour of aconite, but the one, probably, that outweighs all others, is the benefit which happened to the veteran professor of *Materia Medica*, at Gottingen, Andreas Murray, who, in his invaluable "*Apparatus Medicaminum*," says, "*Possem si opus esset plura rheumatismi exempla curati etiam ex propria experientia addere et nominatim, ischiadis nervosæ cujus ante paucos annos tormenta atrocissimi ipse sensi sed vesicatorio et Napello brevi discussa.*" When the limbs have begun to be rigid, to lose all power of motion, and even where the muscles have begun to waste away, and however apparently hopeless, from the contractions that have taken place, the case may seem, the number and variety of successful cases give us every reason to anticipate a successful result from this powerful remedy.

Notwithstanding all that has, at different periods, been urged as to the value of aconitum in rheumatism, it would, probably, have been consigned to oblivion, and colchicum would have remained the favourite remedy, had not Dr. Lombard, of Geneva, instituted his experiments, which deserve, at our hands, the warmest eulogiums.

The failures that were so often experienced from the employment of the common extract, either from the presence of too much vegetable matter diluting the active principle, or from some fault in the preparation, induced Dr. Lombard to try an extract obtained from the expressed juice of the plant, subjected to slight boiling, in order to coagulate the vegetable albumen; this was evaporated in a sand bath, treated with alcohol filtered, and then again evaporated at a moderate temperature. He obtained by these means an extract, upon whose efficacy he had, from repeated trials, every reason to depend; the volatile principles were not dissipated, as in the ordinary extracts, and the active principles underwent no modification by the application of heat. This alcoholic extract of monkshood, Dr. Lombard agrees with others, possesses a specific virtue in dispelling rheumatic fluxions which have been determined to the articulations; he believes its power not to be confined to the immediate vicinity of the articulations, but to extend to the synovial membranes, and to essentially contribute to excite the absorption of fluid effused within them; its action is speedily evinced, and patients have stated to Dr. Lombard, that they have felt great alleviation of their sufferings in the course of an hour; this, however, is not a general law; from twelve to twenty-four hours form the usual period of improvement. A certain degree of excitement of the brain attended upon its administration, marked by a degree of gaiety, great vivacity, and nocturnal visions; in no one case did he perceive any disagreeable effects arise, although he has administered as much as a drachm and a half in twenty-four hours. In only one case did it act as a sudorific; he does not attempt to explain its mode of action, but contents himself with the idea, that it is a specific against rheumatic congestions. It acts upon the excretions neither by altering their appearance nor their quality. He found it not requisite to combine the aconitum with any other drug, and, therefore, prescribed it alone; he began with one-fourth, or half, of a grain, which he gave two or three times a day.

This power of producing absorption at the joints has, from an early period,

been attributed to aconite, and in gout it had met with the commendations of Stoerck, but it was ascribed to its sudorific agency; and its effects upon the transpiration by the skin, were promoted by confining the patient to bed, and giving him large quantities of ptisan; for this purpose, Rosenstein ordered an infusion of the flowers of the elder; sometimes perspiration was thus promoted over the whole of the body, at other times it was confined to the affected part. Gesner observed, that considerable tingling of the skin, pustules full of fluid, and desquamation, followed. The same remark that Dr. Lombard makes, as to the rapidity of its action in rheumatism, is made by many of those who, at an earlier period of its introduction, employed it. Those who had suffered for years, and, indeed, were deemed incurable, are stated to have been free from pain in an incredibly short space of time, and to have had the swellings of the joints completely dissipated.—*Lancet*, August 5th, 1837.

16. *On Tonics.* By G. G. SIGMOND, M. D.—I shall point out to your notice those substances, which produce gradual, yet permanent, changes upon the system, without attempting to enter upon any consideration of the theory of their action; for I believe it is not yet sufficiently matured; they seem, uniformly, to act primarily upon the stomach, and hence to be conveyed to the various tissues and organs. How they influence the living principle, I am not prepared to say; but they seem quickly to produce an increased action in the circulation, marked by a firmer state of the pulse, which is occasionally rendered more frequent. The muscular system, then, seems to derive fresh power; the excretions become more uniformly natural, and there is firmness given to the nervous system. From their action upon the digestive organs, it would appear that the more nearly tonic medicines approximate to the aliment which would be most easily digested, and be more decidedly nutritious, the greater the influence they possess. They should never be of a nature to produce any inordinate excitement, for the reaction, or exhaustion, that would follow upon the stimulus, would be more hurtful than any beneficial influence they could exert. It is a slow, steady, and uniform operation that is required; and the greater the delicacy of constitution for which you are called on to prescribe, the more careful must you be in the quality, quantity, and mode of preparation, of your tonic. The stage of the disease, the state of the functions, and even the season of the year, must be considered before you select your remedy. Iron, of such value in some cases, is productive of mischief if the pulse be full, if any tendency to inflammatory action is present; cinchona, or its alkali, quinine, will prove a dangerous remedy if the vessels of the brain are more than usually full, and particularly, if venous retardation be present; arsenic, to which we look with such confidence in the intermittent fevers of the autumn, and in periodic affections during the winter months, is inferior in value to cinchona, or to carbonate of iron, in the spring of the year. As Foderé has justly observed, arsenic is an autumnal medicine; but it may prove deleterious in the spring. That the barks of trees should have more efficacy in the autumn, when the changes have taken place in vegetable circulation and secretion, is not, to us, a matter of much surprise; but that these substances should, in the spring, act upon the system in so marked a manner, is somewhat unaccountable; but that such is the case has been very generally observed. Some of these remedies enter into the circulation, and are capable of being detected by their usual tests; others, again, have not been discovered. Iron is soon received into the blood, and may easily be recognised; but the Peruvian bark, though it has been continued for some length of time, has not been found. Sometimes diminished susceptibility of the excretory organs follows quickly upon the use of tonics. At others, again, there is found an increased action, almost amounting to violent diarrhœa; and this is oftentimes evident upon the administration of cinchona, and seems to contra-indicate its use; but this more generally occurs where proper steps have not been previously taken to remove, by gentle laxatives, any sordes that may have accumulated during the disordered action in the alimentary canal; and sometimes it is a salutary effort of nature, which, if checked, may afterwards prove an abundant

source of distress and harassment to the patient, and of difficulty and doubt to the practitioner.

One of the striking characteristics of this class of medicines is the power that some of them possess of preventing the recurrence, at fixed intervals, of particular states of the body; and from which circumstance they have acquired the quaint, but expressive, name of antiperiodics. Amongst the unexplained phenomena attendant upon the morbid conditions of the living being, is that peculiar tendency to the return of certain marked symptoms, for several days, at the same hour in the day at which they at first developed themselves; thus, an anguish fever coming on daily, will almost always commence its attack very early in the morning; whilst the tertian, which recurs at an interval of about forty-eight hours, for the most part, begins at noon; and the quartan, which exhibits itself after an interval of about seventy-two hours, is generally present much later in the day.

Several of the affections of the nervous system have a strong tendency to become periodic. The painful disorders called neuralgia, epilepsy, St. Vitus' dance, or chorea, and lunacy, have their precise intermissions and their paroxysms so evident, as to have engaged, at a very early period, the attention of medical observers; but the causes that produce this singular habit of the constitution have been very uselessly sought for. That in many of the functions of the organs periodicity may be acquired, daily experience teaches us. There is no difficulty in so regulating the excretions both of the intestines and of the bladder, that the action shall only recur at expected moments; but that the whole system should be called into morbid states, as in intermittent fever, must remain a subject for inquiry and investigation. But over this striking habit the tonics, both metallic and vegetable, exercise a peculiar influence, restraining, if taken during the intervals, the worst symptoms of the paroxysms, and gradually preventing their recurrence. It is probable that all the febrile diseases have their stated moments of aggravation; and there are few of them that do not, towards evening, exhibit a degree of exacerbation, during which tonics do mischief, even if, in the remission, they have been found serviceable; the proper time, therefore, of employing them, is of greater consequence to us than the inquiry into the causes of the periodic return.—*Ibid.* October 28th, 1837.

17. *Sub-Carbonate of Iron in Cancer.* By G. G. SIGMOND, M. D.—It is chiefly in ulcerated cancer that the carbonate of iron is found serviceable, and cures of cancerous ulcers of the face, lip, nose, uterus, and other parts of the body are detailed in several of the periodical publications of the day; but the claims of the carbonate, or any preparation of iron, to the character of a specific, were after very fair examination disallowed. That in various states of ulceration wearing a very malignant and formidable aspect, this remedy is most advantageous, daily practice fully confirms; that in carcinomatous ulcerations the diseased parts very frequently acquire an aspect infinitely more healthy is also generally allowed; that we may very often, in the most unpromising cases of open cancer, obtain respite from the progress of disease, is all that we can expect from this remedy; which deserves, therefore, our attention and our knowledge of the circumstances that have yet been made known with regard to its exhibition.—*Ibid.* November 4th, 1837.

18. *Sub-Carbonate of Iron in Tic Douloureux.* By G. G. SIGMOND, M. D.—In the year 1820 Mr. Hutchinson gave to the world the result of his observations on the cure of tic douloureux, for which he had administered, with very great success, the carbonate of iron. To the employment of this remedy he had been led from a reflection upon the curative powers of arsenic, which, if its deleterious agency was not such that it cannot be pushed beyond a certain quantity, would be more frequently administered, and with every probability of uniform success. He was led to inquire whether some mineral, possessing nearly the same action upon the system, without producing its noxious influence, might not be found in carbonate of iron; and his expectations of good results were increased by its

utility in many diseases arising from debility and a want of proper action in the digestive organs. He enters, in the work he published, upon the history of this agonizing malady, and discusses the measures that had been fruitlessly taken for its cure. He then brings before his readers six cases in which the iron had been found efficacious. The preparation which he has found serviceable, under different states of the constitution, and various periods of its duration, is this medicine, in doses of two scruples, or even a drachm, repeated two or three times a day; and he adds, that used to this extent, it removes several other affections over which it had been supposed to exert no power. Since the period at which Mr. Hutchinson gave his useful observations to the public, the carbonate of iron has been very largely tried by the profession, and occasionally with the happiest results.

You will read, in *THE LANCET* for 1832, a letter from Dr. Hutchinson, physician to the General Hospital near Nottingham, which he thought it necessary to write in consequence of a clinical lecture delivered by Dr. Elliotson, on the subject of neuralgia, in which he imagined the learned professor discourages the employment of the medicine. In this letter he says—"Ninety-eight unquestionable cases of tic douloureux, the full reports of which I have now before me, many occurring in the practice of my late father and myself, and others reported to us by medical practitioners of the highest respectability and attainments, all of which were cured by the use of the carbonate of iron, most after the persevering employment of other remedies, distinctly prove the fact that the disease is generally not only susceptible of alleviation, but that it may usually be cured." The cases to which he alludes are the result of the successful application of this remedy.

Dr. Elliotson's observations are practical, and will, I think, be assented to by all those who have tried the carbonate of iron. It is "one of the best remedies in this disease, but by no means a specific, and by no means so successful, I think, as in some other nervous complaints." The case which called for the observations of Dr. Elliotson, is one of peculiar interest. You will find it in *THE LANCET* of December 8th, 1832.—*Ibid.*

19. *On the Therapeutic Properties of the Tinctura Ferri Sesquichloridi.*—By G. G. SIGMOND, M. D. This medicine is found in our earliest pharmacopœias under the name of tinctura martis in spiritu salis marini, and was a great favourite amongst the physicians of former days, and was ranked in the dispensatories "as preferable to the calces and croci of iron, being both more certain and more speedy in its effects." As a tonic, where the digestive organs have become impaired, either from disordered function of the stomach, in assimilation, or from diminished power of excretion from the intestinal canal, it is much to be commended. Where much debility, arising from loss of appetite dependent upon such causes occurs, a few drops of the liquid taken in a glass of soda water for a few successive days invigorates the system, raises the spirits, and improves the general health in a very striking manner. In females the effect of this preparation of iron is much more remarkable than in man. It seems to be particularly adapted to them in many of those states in which a deficiency of menstrual excretion, or irregularity of appearance occurs. Whilst it promotes this function, it is also serviceable in restraining hæmorrhages from the womb, although it has been supposed to be contra-indicated, from its possessing the power of acting as an emmenagogue; whenever, in such cases, it produces flushed cheek, dry lips, white tongue, and tendency to cephalalgia, it must for a time be discontinued, and again had recourse to after aperients, as castor oil and the neutral salts. Twelve or fifteen drops taken daily, three times a day, largely diffused in water, will be quite sufficient; soda water, notwithstanding a decomposition occurs, is by far the most agreeable mode of administering it, if given not more than once in the day. It is not generally to be prescribed in combination with the alkalies, nor with their carbonates, nor with the carbonate of lime, or of magnesia, nor should it be added to any infusion of the vegetable tonics which possess an astringent principle, as it renders it of a black colour. It is decomposed by a solution of

gum arabic. Mr. Cline first recommended it, in the course of his lectures, in retention of urine arising from spasm at the neck of the bladder, and since that time it has been very generally administered in the dose of ten minims every ten minutes, until some relief is afforded, and generally this is preceded by a slight nausea. In states of irritation of the bladder during gonorrhœa, when the excretion of water is attended with great pain and suffering, a similar dose, more particularly if a few drops of laudanum, or of tincture of hyoscyamus be premised, will be found most materially to allay the excitement.

It has not been detected in the urine after being thus taken, but, as is the case with the other preparations of iron, it tinges the *fæces* black. In painful micturition it is best given in warm water, and a warm bath likewise facilitates its operation. In a case related by Dr. Collins, of Swansea, where opium, conium, and the warm bath had failed to give relief, five minims were given every six minutes; after the third or fourth dose a cessation of the suffering occurred, and in less than half an hour water passed without any pain. Two days after this state recurred, and opium and conium again failed, but the tincture succeeded, about one hundred and thirty drops having been given before complete relief was afforded. A communication appears in a volume of *THE LANCET*, from Mr. Hancorn, surgeon, at Sheerness, from which it seems that this remedy was, in his hands, very successful in the cure of cholera. He alternated it with doses of soda; it speedily acted as a diuretic, and the evacuated fluid was black. Six cases were thus cured, and three medical men were witnesses to the success of this treatment. I am not aware whether the suggestion thus given has been elsewhere tried. Nitrate of iron had been recommended by Mr. Kerr to remove slight diarrhœas, which were apt to terminate in cholera; and many patients, whose bowels are easily affected, adopted the precaution of using this prophylactic.

I think, that should the cholera become prevalent again in this country, or should an opportunity present itself elsewhere, the powers of the salts of iron, in controlling the disease, should be thoroughly investigated. The discovery of Professor Ramoglia, of Naples, of the presence of a rare species of worm, imbedded in a quantity of viscid mucus in the intestines, and the fact that an extraordinary epidemic, marked by the presence of worms, was co-existent with the appearance of cholera in that city, are points that excite considerable interest, and may lead to inquiries which may throw some light on the subject. It has been observed, that those who drank spirits during the presence of an epidemic diarrhœa, were more subject to its attacks than those who drank porter and ale. All beer must be more or less chalybeate. Malt contains iron as an ingredient, which, during the process of fermentation, is taken up as a carbonate by the water. Beside which, the nails of the hoops of the vessels, and the use of iron tubs and cans in the cellar, add to the quantity of the metal, as was proved in a revenue prosecution; and its presence may be shown by the red prussiate of potash. That beer is occasionally adulterated by iron, judicial investigations have proved, but the accidental impregnation cannot be avoided, and may occasionally, as where worms exist in the intestinal canal, be rather useful than prejudicial.

I believe in every case in which chalybeates are required, the tincture of the muriate of iron may, with every anticipation of perfect success, be employed. It is also occasionally used externally, and its styptic powers are considerable in various hæmorrhages. The bleeding from leech bites is almost instantaneously checked by it. It has been said to be the basis of Ruspini's astringent, which is the most efficacious of its kind. Warts are often destroyed by it.—*Ibid.*

20. *On the Modus Operandi of Nitrate of Silver as a Caustic and Therapeutic Agent.*—Dr. R. D. THOMPSON, in a paper read before the Medical Section of the British Association at their last meeting, stated that light had no power whatever in decomposing nitrate of silver. In every instance in which this apparently occurred, the article had been previously rolled in paper, which afforded an opportunity for it to combine with organic matter, and thus produce the effect

upon which the general opinion was founded. A specimen of pure nitrate of silver, placed in a tube hermetically sealed, was exposed on the top of a house for a considerable period without the slightest discolouration. The specimen was exhibited. To illustrate the action of nitrate of silver when applied to the skin or a diseased surface, Dr. Thompson added a solution of this substance to a solution of white of egg or albumen; he found that two distinct compounds resulted, one soluble, the other insoluble in water. He contended that these compounds were formed when it was applied to an organised surface, and that they being removed, the caustic effect was thus produced; and that, in the internal use of this substance, the doses which could be administered in safety were proportioned to the quantity of albuminous matter contained in the stomach; and that, in the event of a deficiency, the coats of the stomach would be acted upon in the same manner, and death ensue; but that it was impossible for the substance unchanged to become mixed with the blood, and deposited on the surface, as was generally believed.—*Athenæum*.

21. *On the Properties and Uses of Calomel*.—By G. G. SIGMOND, M. D. Calomel possesses medicinal powers of the most important kind; it is a moderate laxative when given alone, and when employed in combination with other drugs it becomes an active purgative. It has been classed by the authors on *materia medica* as a sialagogue, as an expectorant, as a cathartic, as an emenagogue, as an alterative, and as a tonic; and no remedy with which I am acquainted has been more largely employed in the greater number of diseases. Indeed, I need only refer you to the “*Thesaurus Medicaminum*,” or the “*Practical Synopsis*” of John Pearson, that you may judge of the estimation in which it has been held, from the long catalogue you will there find of disordered states in which it has been prescribed by medical men. Its doses have varied in the most extraordinary manner; and, on looking over medical writings, you will be surprised at the great discrepancy of opinion upon the quantity to be employed; yet from the most experienced practitioners, I think you will draw the inference, that in the greater number of cases, where your object is to produce a gentle, but at the same time serviceable, action on the bowels, three grains will suffice. A less dose causes irritation in the alimentary canal, and, without some other medicine be employed, a quantity of biliary secretion is produced, which remains in the system, rather harassing than in any way benefitting the individual's case. In a dose of five grains the chloride of mercury may generally be looked upon as exciting a degree of irritation in this country; yet some of our most distinguished medical men have in India, not only harmlessly, but with considerable advantage, administered scruple doses, three or four times in the course of the day. I would have you read with attention the works of Dr. James Johnson, on “*Tropical Climates*,” and Annesley on the “*Diseases of India*,” for further illustration of this subject. Unacquainted as we are with some of the frightful maladies of the East, which so rapidly run their career, we cannot properly estimate the value of the practice, but from the concurrent testimony of practitioners, who almost unanimously agree upon the excellence of the principle of giving very large doses, until an immense quantity must have been collected in the intestinal canal. This plan of treatment has been attempted to be introduced into this country, but it has not met with much encouragement. In the United States, however, the practitioners have even surpassed our brethren in India; they have given one, two, or three drachms, for bilious fever, three or four times daily, for some successive days. In one of the American journals is a case in which eight hundred and forty grains were administered in the course of eight days; the largest dose was three drachms, and even then no evacuation was produced until an injection had been given.

The great success that attends these doses in tropical dysentery is evident from works and from the cases of various authors related in the different periodicals. Thus Mr. Power's cases in the third volume of the “*Medico-Chirurgical Review*,” are very instructive. Scruple doses were given three times a day, in nine instances; no other mode of treatment was pursued except in one in-

stance, where venesection was had recourse to; a quarter of a grain of opium was generally added. The calomel in a short time brought on ptyalism without hypercatharsis, or any distressing symptom supervening; on the contrary, it seemed to have rather a cooling and sedative influence.

I wish you to recognise the distinction that has been universally acknowledged between laxative and purgative medicines, the first of which merely empty the bowels of such faecal contents as may already be lodged there, whilst the second class have the power of inducing a still further increase of the quantity, and of stimulating the vessels to pour forth more excrementitious matter. Now the chloride of mercury will, according to the dose in which it may be given, produce either of these effects, but it is the biliary secretion that is most augmented, and this is particularly marked by an alteration in the colour and the odour of the faeces. All the preparations of mercury, more or less, have this influence, and patients who have, for a length of time, excreted only blackish and unhealthy looking dejections, discharge them of a yellow hue and of a different odour after a few grains of calomel or of blue pill. The odour is oftentimes rendered more disagreeable, and a change takes place in the gases that are developed. The colour depends upon the kind and quality of the bile secreted by the liver; and where any obstruction takes place, the stools are pale or whitish. The bile itself is of a deep yellow brown colour, and, as Abernethy has observed, it is like wetted rhubarb; if either of these substances be put into a large quantity of water, they will dye it of a bright yellow colour, which is actually the colour of these substances, yet it is so concentrated in the mass as to appear of a deep brown. Green bile is ordinarily the result of disordered function, although it has been occasionally found in the gall-bladder, where the liver is in a perfectly healthy state. Vegetables frequently give their colour to the faeces. The peculiar fætor of the residue of the alimentary matter is acquired in the large intestines; and if the small intestines at their termination, and the large intestines at their beginning, be examined, there will be found almost a line of demarcation; to what this is owing we are at a loss to say. It is not alone a chemical decomposition that occurs, but the animal economy imparts a peculiar change.

The chloride of mercury appears to exercise over the action of the large intestines some power, as the gaseous exhalations materially differ when it has been employed, and this is particularly striking in children, the odour of the dejections being very materially influenced in them, and much more offensive fætor being the result, and this, in general, is a proof of the due action of the medicine, for the system, previously disordered, appears thus to rid itself of a deleterious agent.

Where the chloride of mercury is too irritating alone, it may very properly be combined with other remedies, and there is a pill which has long been known to the profession under the name of Plummer's pill, which has been found a useful medicine.—*Lancet*, December 2, 1837.

22. *On the effects of Blue Pill.* By G. G. SIGMOND, M. D.—The blue pill has been long much celebrated and is one of the most popular remedies of the day in the dose of four or five grains. Its high estimation, it chiefly owes to the work of the late Mr. Abernethy, entitled “Surgical observations on the Constitutional Treatment of Local Diseases,” and likewise to the practice he pursued, and the precepts he inculcated amongst a large portion of the students of medicine, who are now in the full zenith of their honourable career.

Mr. Abernethy's mode of pursuing his mercurial course was cautious and regular. He prescribed only small doses, taking care that the error so often fallen into, of increasing the quantity, when any benefit was perceptible, should be avoided. Nothing can be more injudicious than the augmentation of the quantity of this medicine without sufficient reason. In small doses the biliary secretion is corrected, and the digestive organs are placed in a healthier condition; larger quantities exert an influence on the whole constitution, and alter the state of the nervous system; thus controlling diseases dependent on an irritable

and disturbed state of the nervous function; but, in still larger quantities, it never fails to irritate and weaken the system, and thus to derange the digestive organs. Five grains of blue pill, taken at night, will not irritate the bowels, but, generally speaking, three are sufficient, and may be continued for some days; occasionally the mouth becomes affected, with a very few nights' repetition of the dose, but this often depends upon the badness of the blue pill, for a very small quantity of sulphuric acid, in the conserve of roses, will materially affect the preparation, and produce very bad consequences. It happens that whilst the secretions from the liver are materially improved, as the excretions testify, that dyspeptic symptoms supervene; in such cases the blue pill is to be discontinued, and again had recourse to at a future time. Calomel, in a very small quantity, will often be the source of high irritation, where blue pill is indicated, but, as I shall have occasion to state to you, the powers of calomel, when properly administered, are essentially necessary to be trusted to.

The functions of the skin are often impaired in consequence of a disordered state of the digestive system, and these are restored to their wonted state by this remedy; the operations of the mind are enfeebled from similar causes; hence hypochondriasis, disorders of the nervous system, and hysteria, are controllable by the same means. Enlargement of the absorbent glands, malignant tumours, and ulcerated sores, are relieved and cured, when they are connected with such disorders of the digestive organs as are remedied by the therapeutic agent which I have considered. Every system of practice is not only likely to be too much extolled, but it is also liable to be followed with too sanguine expectations, and to be pushed to a greater extent than the original founder intended, and doubtless this has been the case with the blue pill. It is capable of producing much mischief; its abuse is as formidable a cause of disease as its proper employment is certain of being a source of health. It is not any one plan, or any one particular remedy, that can be relied on, in all the complicated maladies of our nature, but there are unerring principles which are to guide us in our practice; there are certain effects produced upon the human economy by certain agents, and a knowledge of the influence of each must teach us not to circumscribe our list of remedies, nor to place undue reliance upon any drug, however powerful it may prove. From want of such a reflection the blue pill has been too often indiscriminately employed, and has become the source of mischief, as I shall have occasion to state to you.—*Ibid.* Nov. 11.

23. *Influence of the Weather on the action of Mercury.* By G. G. SIGMOND.—It is always of very considerable importance to pay attention to the state of the weather, both as to the prevalence of disease, and as to the proper period at which remedies are to be administered. * * * During fine clear weather the preparations of mercury seldom affect the bowels, nor do they produce that depression of spirits, which is so often observed to accompany their use during damp moist weather. * * * During moist states of the weather mercurial preparations should be sparingly prescribed; and when, from the diseased state of the system, they cannot be dispensed with, very great attention is to be paid to the clothing. To every one in damp, moist conditions of the atmosphere, flannel is a great comfort, but silk is the most useful covering to the body. * * * Patients, therefore, during the mercurial influence are much better wrapped in silk than even when confined to bed; but this latter precaution can more generally be taken, and hence the different preparations are always best administered on the invalid retiring to bed, and he should be kept there until the effects have been produced; this is more especially the case with calomel. As much mischief has arisen from the want of proper precaution, as from large doses, and the habit of the individual is always to be duly weighed and considered. Females of a delicate, nervous, irritable frame, are rendered languid, peevish, incapable of fulfilling their usual duties; they feel chilly, they easily shed tears, are sometimes almost hysteric; and though they have no actual suffering to endure, are almost as miserable as if they had it to encounter. On the other hand, the stout, robust, plethoric individual, who probably has to bear

very great pain, from the nature of the disease, seems quite insensible to any unwonted effect; it, however, more generally acts upon such a constitution with greater energy, and leaves behind it a more decided state of debility, if it be persevered in for any length of time, or if it be often repeated. The inhabitants of this country are very little influenced by it, comparatively speaking, from their high mode of living, and from their being so much habituated to the changes of climate; but the foreigner is not so fortunate, nor can he bear a dose which in his native air, he could take with impunity. Indeed, they have a horror of blue pill and of calomel; and I certainly have witnessed their greater incapability of bearing it here than in their own climate. I have had opportunities of comparing these points—I have seen the practice on the Continent, and I held the station of physician to the King's Theatre, under the administration of Mr. Ebers, for three or four years, and I was uniformly struck with the singular change that climate and habits of life produced upon the effects and operation of medicine. Those who could bear well full doses under ordinary circumstances, could not submit to much smaller ones here, nor could they bear in any shape or form, the administration of mercury.

The annals of practice in India likewise show that doses of mercurial preparations are very much influenced by a dry climate. Some very highly intelligent men there have prescribed quantities, and their repetitions which, in our moist and uncertain atmosphere, would very quickly injure the constitution, and leave it in a state to be acted upon by every morbid exciting cause that might present itself. Whether all this is to be attributed to electric states of individuals, or of the atmosphere, remains to be explained. Some of the phenomena which are observed demand further inquiry; nor do I know that they have undergone much investigation.—*Ibid.* Nov. 25.

24. *On the use of Strychnine.* By M. BALLY, Physician to the Hospital La Charité.—In addition to the violent spasmodic contractions produced by strychnine, M. Bally has observed the following symptoms of disturbance of the cerebral circulation: an appearance of stupor, vertigo, tinnitus aurium, sleeplessness, and turgescence of the capillaries of the face. The strychnine, therefore, ought never to be employed in diseases combined with, or resulting from, determination of blood to the brain. The use of the strychnine should be restricted to cases of paralysis depending on disease of the spinal marrow; and, where this part has suffered no severe injury, the greatest benefit is often derived from its employment. One remarkable case is mentioned, of a man, about fifty years of age, paralytic for five years, who was radically cured by the internal employment of strychnine. M. Bally does not strongly recommend this remedy in cases of amaurosis, on account of their frequent complication with disease of the brain. In paralysis of the extensor muscles of the hands and feet, some benefit is derived from the administration of the strychnine by the skin; but more credit is due to time than to the remedy. In cases of colica pictonum, a combination of strychnine and hydro-chlorate of morphine has been found highly successful; one-sixteenth grain of the former with one-thirty-second grain of the latter were given in the form of pill, at first twice a day and subsequently more frequently. M. Bally's object in administering this combination is—1, to alleviate pain; and, 2, “to transform the disease of the spinal marrow into another morbid affection much less severe and more easy of cure.” No success attended the use of strychnine in cases of diarrhoea and dysentery, though the nux vomica is strongly recommended in those diseases by Hufeland. With regard to the dose of the strychnine, M. Bally recommends us to begin by a twentieth or one-sixteenth, and, in case the stomach is not very irritable, by one-eighth of a grain. The dose may be increased at intervals of three or four days to one, two, three, or four grains. It is rarely necessary or prudent to surpass this last dose. Two or three grains are usually sufficient to produce the desired effects. In some instances the effects produced by the strychnine are very violent; so violent, that it has been sometimes necessary to fix the patient firmly to his bed, as the

strength of two persons could scarcely hold him down.—*B. & F. Med. Rev.* from *Bulletin Générale de Thérapeutique*. Feb. 1838.

SPECIAL PATHOLOGY AND SPECIAL THERAPEUTICS.

25. *Periodical Uterine Dropsy*.—A remarkable case of this affection, of which but very few are on record, occurred in the practice of Dr. DUBEDAT fils, of Bouglon, (Lot-et-Garonne.) The subject of it was a woman 32 years of age, of lymphatic temperament, of a constitution weakened by hard work, bad food, and an unhealthy residence, and twelve years a wife.

Every month this woman passed per vaginam from twenty-five to thirty pints of clear, limpid water, of a slightly yellowish tinge, and afterwards discharged, during two days, a few drops of blood, deficient in colouring matter. After this evacuation, she was perfectly well; but another collection of water soon formed, of which she was sure to be relieved the following month. This condition had continued eight months before Dr. Dubedat saw the patient. She could assign no cause for the disease. It had come on without injury or sensible lesion of any kind, or alteration of the functions; the only change in her health was emaciation and general debility, which daily increased.

The abdomen was of extraordinary size, and there was considerable dyspnoea; the pulsations of the heart regular; digestion difficult; great constipation; urine scanty but passed frequently, and without pain; no visceral engorgement; pulse feeble, slow, contracted; face pale, as also the tongue and gums; blueness around the eyes.

The neck of the uterus was shortened and infiltrated; its body was also infiltrated, large, and light compared to its size. The principal source of complaint being the constipation, two ounces of castor oil, barley water with nitre, and emollient enemata were ordered.

The oil operated, and the day afterwards (May 28) pains in the loins came on announcing that an evacuation of water was about to take place. In fact, during the night of the 29-30 May, the discharge occurred, and the bed was entirely inundated with it.

On the 2d of June the doctor found his patient quite well; her abdomen was flat; her digestion was free; her appetite had returned; her pulse was better; and her menses had ceased.

Diuretics were ordered, and, for diet, milk morning and evening, and roast meat and meat soup for dinner.

June 10.—Urine increased in quantity.

June 15.—The abdomen had enlarged, continued to increase, and, at the usual period, the water was discharged, but only half the ordinary quantity. The menses recurred as usual.

During July the diuretics were continued in increased doses; the flow of urine became more abundant; the abdomen did not sensibly enlarge; but on the 6th of August there was a slight discharge of water. The menses appeared immediately after, and were more abundant than usual. After this the discharge of water did not recur; the menses became more abundant and continued longer; and, under the use of tonics, the patient's health was restored.—*Bulletin Général de Thérapeutique*, May, 1838.

26. *On the employment of Tents in the treatment of Constipation*.—The *Archives Générales* for May last contains some observations, by M. FLEURY, on the treatment of idiopathic constipation, or that form of the disease which is unconnected with any organic disease, but which seems to arise solely from atony of the rectum. M. Fleury says he has successfully treated some cases of this form of the complaint, which had resisted every other means of treatment, pointed out by authors, by tents smeared with belladonna cerate, and introduced into the rectum at bed time, and kept in all night; the size of these tents being progressively increased. By this means he asserts that he has always succeeded in

curing the most obstinate cases of constipation, and in re-establishing the functions of the intestine. In no case were more than fifteen or twenty tents required.

27. *On the use of solid Nitrate of Silver in Gonorrhœal and other Discharges in Females.*—It appears from the statements of M. Ratier, in a late number of the *Lancette Française*, that M. Ricord, the eminent surgeon of the Hôpital des Veneriens at Paris, was the first who employed the nitrate of silver, in the solid state, as an application in these diseases.

“ Since the announcement of this practice some years ago, in the pages of the *Bulletin de Thérapeutique*, numerous medical men in other countries as well as in France, have confirmed the results of M. Ricord's experience. In Britain Drs. Balbirnie and Hannay have published memoirs on the subject, and recommended the practice in very high terms. The statements of the latter gentleman however seem to us to be too indiscriminate and unguarded; for although the gonorrhœal and other discharges from the vagina in the female have been very remarkably benefitted in our experience by the treatment alluded to, it is to be remembered that M. Ricord does not recommend its adoption, or at least does not promise much benefit from it, in all cases without exception. The differences in the character and severity of the complaint, in its duration, and in the idiosyncrasy and constitution of patients, forbid the scientific man from too general and too confident expectations in the cure of any disease.

“ We have another fault to object to Dr. Hannay; and this is that he has not adopted the use of the improved *porte-caustique*, recommended by M. Ricord, and trusts to the rude and clumsy expedient of a piece of the caustic inserted in a quill.

“ He indeed tells us that even if the caustic should slip out and remain in the vagina, we need have no apprehension of any inconvenience; but such an assurance is not likely to satisfy any cautious surgeon. The use of the *speculum vaginæ* is necessary to permit the caustic being safely and effectually conveyed to the os and cervix uteri. As the seat of the discharge may be either the neck of the womb, or merely the mucous membrane of the vagina, the mode of applying the caustic will vary to a certain extent in different examples. When the former is the case, if the interior orifice be sufficiently patent, the caustic should be introduced fairly within it, and the inner surface of the neck of the organ should be freely rubbed with it.

“ In withdrawing the instrument, the whole extent of the vaginal mucous surface also should be similarly treated.

“ When the uterine orifice is too narrow and confined to allow the introduction of the solid caustic, we should then use injections of the nitrate.

“ In such cases, where the morbid discharge proceeds from the vagina only, it is unnecessary to apply the caustic to the os or cervix of the uterus.

“ The treatment by the application of the solid nitrate of silver has been found of great benefit not only in old gonorrhœal and leucorrhœal discharges, but also in recent or acute gonorrhœa, before the inflammatory symptoms are subdued.

“ The nitrate, locally applied, is a most potent *antiphlogistic* remedy. We have witnessed numerous cases of acute gonorrhœa in the female cured by two or three applications of the solid nitrate to the mucous surface of the vagina: the burning uneasiness and pain induced usually cease after the first application. When the discharge has nearly ceased, M. Ricord recommends that a plug of dry charpie should be introduced and retained in the vagina; as he is of opinion that the mucous membrane recovers its healthy condition more quickly when its opposite surfaces are kept apart from each other; just in the same manner as the discharge in *balanitis* is so much diminished by putting a strip of dry lint around the glans penis.

“ However useful the treatment of Gonorrhœa, &c., by the application of the nitrate of silver has proved, M. Ricord is far from recommending its adoption, to the exclusion of other methods. The use of simple cooling injections, and of purgatives and low diet will suffice to cure many cases of the disease when

recent; and the more chronic forms are often very effectually relieved by astringent washes, and by the exhibition of steel and other tonics internally. Perhaps, no medicine is, on the whole, more efficacious in improving the general health and in thus correcting the local disease in *old* leucorrhœal discharges than *steel*, in some form or another. Warm clothing too will often contribute to remove this troublesome class of complaints.

"In reference to this point, M. Ricord says: 'how often have we seen most obstinate vaginal discharges quickly disappear, as soon as the use of warm stockings and flannel drawers had protected the feet and limbs from cold and moisture.'

"In conclusion, we are informed that M. Ricord gives a decided preference to the application of the solid nitrate of silver to the mucous surface of the vagina (and also of the *os tincæ* in old obstinate cases) over the use of injections of this metallic salt. All that is necessary in most cases is simply to pass the caustic rapidly along the surface.

"It has been observed that the slight irritation, thus induced, very often causes a premature coming on of the catamenia."—*Medico-Chirurgical Rev.*, July, 1838, and *Gazette des Hôpitaux*.

28. *On the use of Arsenic in some Disorders of the Uterus*.—HENRY HUNT, Esq., of Dartmouth, has communicated to the Royal Medical and Chirurgical Society a paper on this subject. Mr. Hunt was first led to observe the effects of arsenic on the uterus in a case of carcinoma of that organ, in which it relieved the suffering of the patient in a remarkable degree, and in exact proportion to the increase of its poisonous effects upon the system. This fact, added to the circumstance of the genitals being occasionally observed to be inflamed where arsenic has been taken as a poison, induced the author to hope that it might be found to be serviceable in some disorders of those parts, an opinion in which he was encouraged by the experience of Dr. Locock, in a case in which that mineral had been administered by him for a cure of the disorder of the nose, he not being aware at the time that the patient was also affected with menorrhagia. The author relates six cases of menorrhagia, in which the patients had taken arsenic with very marked benefit. In these instances there was no organic disease of the uterus; but the excessive flow of the menses appeared to be the consequence of exhaustion, originating however, in the several individuals from different causes. The success attending the use of this medicine in menorrhagia induced the author to employ it in some other disorders of the uterus; and some favorable cases of its agency are annexed. Some of the most favorable of these are a case of irritable uterus, and one of neuralgia, occurring regularly about the menstrual period, both of which were entirely relieved. The paper concludes with some observations on the effects of arsenic on the genital organs, when given in poisonous doses, from which the author infers that its agency depends on its action on the mucous membrane as a stimulant.—*London Medical Gazette*, April, 1838.

29. *Compression of the Head in Chronic Hydrocephalus*.—Induced by the belief that chronic hydrocephalus might sometimes result from the want of due resistance in the bony parietes of the head, some physicians have resorted to compression as a means of cure; and three cases have been recorded, one by Sir Gilbert Blane, (*Med. and Phys. J.*,) and two by Mr. Barnard. (*Med. Repos.*,) in which this measure seemed beneficial. The former employed a roller, and the latter straps of adhesive plaster, to effect the compression. As other means were, however, resorted to in these cases, it is difficult to determine what share the compression had in the amendment which took place; and as this last measure is said to have since failed entirely in other hands, it seems upon this result to have been abandoned by most practitioners.

Dr. ENGLEMAN, a German physician, having been constantly unsuccessful in his treatment of chronic hydrocephalus by the usual means, resolved to give a trial to compression, and the result he states to have been most encouraging. He

has tried it in ten cases since 1834, and has obtained a complete cure in all, and in no one case has it been necessary to continue the compression longer than a year.

The following is a condensed account of three of the cases related by Dr. Englemann, as given in the *Lancet*:

"CASE I.—Jan. 1834. A male child, six months of age; two brothers already cut off by hydrocephalus. The circumference of the skull is seventeen and a half inches; the anterior fontanelle is more than an inch across; all the sutures are separated from one another, and the bones of the skull are thin. The head of the infant vacillates and inclines backwards; it is unable to sustain it; the face is pale; the pupils dilated. On the 10th of January the head was shaved and moderately compressed with strips of adhesive plaster, which did not produce any apparent uneasiness or accident. No effect followed during the first month; the bandages were reapplied in February; the head now became gradually more firm, the expression of the face more marked, the sleep more tranquil. About the middle of April the bandages were again readjusted, and an important degree of improvement was now manifest; the size of the head had diminished by half an inch; the bones had increased considerably in thickness, and the sutures were nearly closed. On the first of June the apparatus was renewed for the third time, and shortly afterwards the cure was complete.

"CASE II.—May, 1835. Child one year old; same symptoms as in the former case; appetite voracious; alternations of constipation and diarrhœa; head nineteen and a quarter inches in circumference; bones thin; sutures separated from one another; scalp warm, and covered with dilated veins. The bandages of sticking plaster were continued for two months, when a marked improvement in the child's condition was observable. On the 14th of August the circumference of the head had diminished by half an inch, and the sutures were closed; the bandages were reapplied on the 3d of October. The child now began to walk about and was able to sustain his head erect on the neck; the teeth were cut without any accident. In the month of December the cure was completed.

"CASE III.—January, 1835. Child nine months of age; same symptoms as in former cases; frequent vomiting; pupils insensible; great listlessness and apathy; circumference of head nineteen inches; width of fontanelle one and a half inches. Apparatus applied, and renewed towards the end of February, when the head seemed much reduced in size. Apparatus re-applied on the 18th of March; diminution of volume of head half an inch. The apparatus was again renewed on the 15th of May, and 15th of June, at which latter period the child was restored to health; the fontanelle was now completely closed, and the head measured only eighteen inches in circumference."—*Med. Annal. and Arch. de Med.*, June, 1838.

30. *Ointment for the cure of Itch.*—Dr. Rol gives the following formula for an ointment for the cure of itch. He extols it for its efficacy, and for, at the same time, having no unpleasant odour or being in any respect disagreeable: R. Ol. Amig. ʒi; Cera Alb. ʒij; melt the wax in the oil in a moderate heat, and allow the mixture to cool. Then incorporate with it, in a marble mortar, Protochloruret of mercury finely powdered ʒij.

This quantity will almost always suffice for a cure. It is to be divided into ten or twelve parts, which serve for as many frictions, to be made at night, on going to bed, over the affected parts. Many persons are cured by frictions with it to the wrists and ankles only. The ointment may be scented with oil of bergamot or of cinnamon.—*Bulletin Gén. de Thérapeut.* May, 1838.

31. *Incontinence of Urine.*—In a former No. of this Journal (August 1836, p. 505,) we noticed the success obtained by Dr. Mondière in the treatment of incontinence of urine, with the extract of nux vomica. Dr. CHERCHIARE has been equally successful, it appears, with this remedy. In the *Bulletino della Scienze di Bologna* he records two cases cured by it.

The first case was that of a girl of 19 years of age, who from her infancy had

passed her urine involuntarily every night in her sleep. Dr. C. prescribed the following: R. extr. nux vomic gr. viii. Oxid. ferri nig. Syr. Acetos. q. s. Fit pil. No. xxiv. Three to be taken daily. In eight days the cure was complete.

The second case was that of a young woman whose urine flowed involuntarily day and night after her first delivery. Dr. C. having been satisfied, by examination, that there was no fistula, but inferring therefrom that the incontinence resulted from weakness in the neck of the bladder, in consequence of contusion by the head of the child in its passage; he gave the extract of nux vomica, as in the preceding case, and in 15 days the patient was cured.—*Gaz. Med. de Paris*, 14th April, 1838.

32. *Gangrenous Stomatitis*.—M. BAUDELLOCQUE, of the Childrens' Hospital, Paris, is said to be very successful in his treatment of gangrenous stomatitis (*gangrænopsis*). His treatment consists principally in the cauterization of the gangrenous spots with hydrochloric acid, and afterwards covering them with powdered chloride of lime; and the use of tonics, generally the syrup of cinchona given per anum. *Journ. de Med. et de Chimie Prat.* Jan. 1837:

33. *On Incontinence of Urine*.—THOMAS WHATLEY, Esq., has communicated to the *London Medical Gazette* (July, 1838) some interesting observations on incontinence of urine.

He very justly observes this affection may arise from two very distinct causes: "It may have its origin from some affection of the inferior spinal nerves distributed to the neck of this organ, and thus causing, as we may say, primary or idiopathic paralysis; or from a chronic change going on in the mucous lining, prompting the frequent evacuation of its contents, and gradually overcoming and destroying the resistance of the sphincter muscular fibres. Many other causes may also act sympathetically in producing symptoms of this kind. Calculus in the pelvis of the kidney or bladder, ascarides in the rectum, or an altered state of the urinary secretion, may be enumerated as those most commonly brought into play. No class of diseases needs more minute investigation to form a judgment upon the parts primarily affected, than those to which the urinary organs are subject. In men we sometimes meet with the prostatic portion of the urethra unnaturally irritable; and upon the change of position, or slight exertion, the fibres of the neck of the bladder relax, and about a teaspoonful of urine escapes unrestrained. This does not arise from any undue fulness or distension of the organ, but solely depends upon the cause I have above mentioned; by the uneasiness it occasions momentarily relaxing the sphincter, and allowing a small portion of water to dribble away, without any effort or aiding of the will. We may in general relieve this uncomfortable state by the occasional and gentle introduction of an elastic bougie, bathing the perineum with warm water, or the hip-bath; and, if necessary, by the application of a few leeches. Medicine internally administered is but of little avail, but if any is advised, possibly the best that can be given will be the soda, with small doses of opium, at the same time keeping the bowels sufficiently soluble by mild aperients.

In those instances where irritability, or chronic inflammation of the mucous membrane, seems to be the primary cause in producing the symptoms of disease, I could recommend the balsam of copaiba, in very small and unstimulating doses, in combination with opium, and, at times also, with the infusion of the uva ursi, as the means most efficient in leading to beneficial results. Large and free doses of the balsam are but badly borne, and instead of relieving greatly increase the complaint. Eight, ten, or fifteen drops, is as much as should usually be given. The liquor potassæ may sometimes be added to the above, or the patient directed to drink freely of lime-water, either alone, or when the stomach will bear it, with a little milk. If the nights are much disturbed, and the system suffers for want of rest, and there is much uneasiness about the lumbar regions, a pill composed of equal proportions of the extract of conium, and Dover's pow-

der, about two or three grains of each, and given regularly at bedtime, will materially assist our other means of cure. The loins and sacral regions may also be rubbed every night with some stimulating liniment, or, what is still better, with an ointment composed of the ung. hydr. fort. and camphor. The strictest attention should be paid to the state of the bowels, and a mild aperient occasionally administered, carefully avoiding those of a mercurial character. The hip-bath used every third evening, generally affords much relief. The diet of the patient must be light, and the drink consist of some mild and unstimulating beverage. If wine is allowed, it should be taken diluted with water.

For that incontinence of urine which arises from paralysis, and where the coats of the bladder are in a healthy state, a more stimulating mode of treatment must be adopted. Blistering should be had recourse to, and repeated more than once if necessary. The Tinct. Lyttæ, or the powder of the fly, in small doses, from its possessing a peculiar influence over the neck of this organ, is a valuable medicine in this affection; and if it fails, when given alone, may be combined with the muriated tincture of iron, and opium. The loins, hips, and pubic regions, may also be sponged with cold salt and water every morning, and rubbed dry, either with a coarse towel, or the flesh-brush. In those cases which resist this mode of treatment, possibly the strychnine may be of service; but I have no experience of this remedy, and only point it out as well worthy the attention of others. Opium in both of these varieties is of essential service: in the first mentioned its *modus operandi* is easily explained, but not so in the last: possibly it may act by subduing some remote irritation in the system, from which the local disease derives its origin. The fact of a local disease having some remote constitutional origin is too strong to be denied.

34. *Nitrate of Silver in Phlogosis of Mucous Membranes.*—The antiphlogistic powers of nitrate of silver in inflammation of the mucous membranes, seems to becoming daily better appreciated. Its sanative influence over certain inflammations of the conjunctiva has been long known to ophthalmologists, and we formerly noticed that it had been used with advantage in gastralgia, and scirrhus of the stomach, (No. for May, 1837, p. 225,) and also in vesical cattarrh. (August, 1838, p. 488.)

M. BOUDIN has extended its application to the cure of the inflammation and ulceration of the ileum, which constitute the most constant lesions in typhoid fever. When diarrhœa is the principal symptom, he administers the nitrate in enema, in the dose of from two to eight grains dissolved in six ounces of distilled water; and when gastric symptoms predominate he gives it by the mouth in pills in the dose of a fourth to half a grain; and when the whole gastro-intestinal mucous membrane appears phlogosed, he combines the two modes of administration.—*Journ des Connaiss. Med. Prat.* May, 1838.

35. *Subcarbonate of Iron in Hooping-cough.*—Dr. STREYMANN highly extols the efficacy of the subcarbonate of iron in the cure of hooping-cough, in its second stage. The following is the formula he has found most convenient: R. Ferri Subcarb. gr. xxv; Sacch. Alb. q. s Ft. pulv. No. x. One to be given every three hours. This dose is increased according to the age of the patient, adding a grain for every year of the patient's age. Dr. S. represents the effects of this remedy to be very prompt; and states that in a few days there remains only a slight catarrhal cough, which gradually disappears.

Dr. S. cautions against the use of this remedy in the early stage of the disease: at that period it produces irritation instead of benefit. In this stage he employs leeches, opiates and emetics, and before commencing with the subcarbonate he recommends the stomach to be emptied by an emetic.—*Bulletin Gén. de Thérapeut.* March, 1838.

SURGICAL PATHOLOGY AND THERAPEUTICS AND OPERATIVE SURGERY.

36. Extirpation of Parotid Gland.—This operation has been performed by C. WIDMER, Surgeon to the Forces. The patient was a woman 34 years of age. The tumour was in the right parotid region, of enormous size, rising to the zygoma, elevating the lobe of the ear, and descending to the middle of the sterno-mastoid muscle. It was firm, lobulated on its surface, and its attachments to the parts beneath so unyielding, that Mr. Widmer thinks there can be little doubt of its being a diseased growth of the parotid itself. The tumour gave the patient great uneasiness, and interfered much with the motions of the jaw. The deformity was frightful.

The operation was performed in the following manner:

“She was placed on a table, the head inclined to the left side, and an incision commenced behind the ear, which was carried down to the lowest part of the tumour. The external jugular vein being divided, was tied at both ends. Another incision was then made in front of the ear, so as to liberate its lobe, and leave an angle of integument attached to it; then carrying the knife parallel to the first incision, a sufficient elliptical portion of integument remained insulated upon the surface of the tumour.

“I now began the removal of the mass from below upwards, first by dissecting freely with the knife, and as I got deeper I separated it from its attachments with my fingers. One small vessel only required to be secured in this stage of the operation. But when rather more than half of the tumour had been separated, a band too resisting for any thing but the knife presented itself, and, being divided, a powerful stream of arterial blood issued from the trunk of the external carotid. The mouth of the vessel was visible, and instantly secured with a ligature. The process of separation was continued, mostly by the fingers, until all but the upper portion was removed. This portion evidently dipped deeply down between the styloid and mastoid processes, but was separated from its situation, quite unbroken, without a stroke of the knife, and presented a sort of mamillary projection of the gland. The styloid process was now quite bare, as well as the transverse process of the atlas. The tumour did not adhere to the latter. One other vessel, not of large size, required a ligature before the operation was concluded. The periosteum covering the angle of the jaw had been absorbed by the pressure of the tumour. The chasm presented after the removal of this large mass was extensive, and I had the satisfaction of pointing out to my friend, Dr. Short, surgeon of the 24th regiment, (who entered the room just at the conclusion of the operation,) the situation occupied by the mamillary projection of the tumour, and the bare tyloid process and transverse process of the atlas. The tumour weighed twenty-one ounces and a half (avoirdupois,) and exhibited, when pressed, an oozing of a semi-purulent fluid from numerous points of its surface.

“Sufficient integument was left to meet neatly, and was kept in contact by sutures. No hæmorrhage occurred after the operation. She was given an opiate and put to bed. Next day there was retention of urine, which was relieved by the catheter, and the catamenia appeared at an irregular period. On the third day some fever occurred, with some pain in the head. The bowels were opened by infusion of senna and sulphate of magnesia. Next day the bladder expelled the urine. The febrile symptoms abated on the fifth day, but there was profuse suppuration from the bottom of the wound; the integuments adhered below. On the 6th of June she was removed in a carriage from the hospital to an airy situation, where her friends reside; and by the 14th of July the wound was perfectly healed.

“The features are a good deal deformed, owing to the paralysis of the muscles of the face, occasioned by the division of the trunk of the portio dura. The orbicularis palpebrarum having lost its power of closing the eye-lids, the globe

of the eye-lids appears to suffer from a slight degree of inflammation. She is, however, in perfect health, and very thankful for the result of the operation."

Mr. Widmer considers the mode he adopted of commencing the detachment of the tumour from below, superior to the opposite plan followed by Mr. Carmichael, as in the latter there would have occurred much greater perplexity in securing the large vessel with such a considerable portion of the mass unseparated below. Besides, he had the power, by grasping the lower part, of exerting much force in raising the tumour, with the vessel imbedded in it, from its situation, before it was divided, which exposed the bleeding mouth so fully to view.—*London Medical Gazette*, June 16, 1838.

37. *Treatment of Carcinoma of the Mamma.*—We commend to the attention of our readers the following remarks on the treatment of carcinoma of the mamma, by JOHN MACFARLANE, M. D., the distinguished senior surgeon of the Glasgow Royal Infirmary. His estimate of the value of escharotics and compression appears to us to be entirely just; and, though many surgeons of high authority repose great confidence in extirpation early resorted to, we fear that a careful examination of the results of the operation will show that there are too good grounds for the distrust in its utility expressed by Dr. Macfarlane. It is certain that, in a large majority of cases in which this measure has been resorted to, the cure has not been permanent; and also that, in some at least of the cases in which the disease did not recur after the use of the knife, the tumour removed was not genuine cancer. The facts adduced, therefore, by Dr. Macfarlane of the unsuccess of extirpation should be fairly weighed, and carefully compared with the results obtained by others, for it is only by a comparison of a large number of well observed cases that the proper estimate of the value of extirpation for the cure of cancer can be ascertained.

"In regard to the treatment of carcinoma of the mamma, I shall consider," says Dr. Macfarlane, "shortly the three different surgical methods at present in use, for the purpose of attempting to estimate their value, and of ascertaining how far they have proved successful in eradicating or palliating the disease.

"1. *By Escharotics.*—This mode of treatment has been long known, and its history has been diversified by the employment of a great variety of caustic remedies. Among the profession it has in a great measure fallen into disuse, having been found very painful and uncertain; but it has been, and continues to be, extensively employed by empirics. Within the last four or five years, however, the attention of the profession, both in this country and in France, has been again directed to this mode of treatment; and attempts have been made to convince us that it is less painful and more certain in eradicating the disease than extirpation.

"Drs. Canquoin and Riofrey have published memoirs showing the great advantage obtained from, and the numerous cures effected by, the use of the chloride of zinc, when employed in the form of paste. In illustration of its efficacy, they relate cases in which the whole mamma, and all the tissues between the breast and the arm-pit, with the diseased glands in the axilla, were destroyed, exposing the muscles and laying bare the blood-vessels, not only with impunity but with success. After a careful examination of the histories and progress of several of these cases, I am not prepared to view them as having been all decidedly cancerous; and in some of the others, where the malignant nature of the disease is less equivocal, I doubt much if the apparent cures proved permanent. From what I have experienced, and I shall afterwards mention, of the great want of success in removing the disease by the knife, when the diseased parts are more immediately under observation, and can be followed out and more certainly extirpated, I am satisfied that, in other hands, the sanguine anticipations of the advocates of this new caustic treatment will not be realized.

"During my late attendance at the Infirmary, and since that time in private practice, I have employed this paste in four cases of scirrhus mamma: in two cases where the disease had returned after ablation, and in several cases of

cancer of the lip, and in cutaneous cancer of old people. In the latter affections, which are almost uniformly local, I have succeeded; but not in the former. On the contrary, although I have destroyed large portions of the mamma, and obtained for a time firm and healthy looking granulations, yet new tumours uniformly sprung up in the old site or its vicinity, and the general progress of the disease was always accelerated. The application, which had to be frequently repeated, produced great pain, and was not without its injurious effects on the constitution. In two of the cases, in which the mammary tumours were large, the febrile excitement was excessive, of more than two weeks' duration, and complicated with a violent gastro-enterite, which I attributed to the action of the medicine; and in patients of a cancerous diathesis, this constitutional excitement unquestionably hastened the progress of the internal disease.

"2. *By Compression.*—This method of treatment has also had its periods of popularity and neglect. Young, in this country, and Recamier in France, have been its most powerful advocates. The former commenced this practice in 1809, and employed, for the attainment of his object, adhesive straps, sheet lead, tin plates, compresses, and bandages. He gives a few successful cases where the mamma only was affected, and also in which there were diseased glands in the axilla; and he alludes to others in which the practice was unsuccessful.*

"Recamier, as one of the physicians of the Hôtel-Dieu, of Paris, has enjoyed ample opportunities of witnessing this disease, and of testing the efficacy of continued, and methodical pressure, which he employs by means of compresses of agaric, bandages, &c.† Of 100 patients treated by him, 30 were completely cured by compression alone (but he does not state in how many of these the disease was seated in the mamma;) 21 were benefitted by it; 15 submitted to ablation, after compression had failed; 6 were cured by compression and cauterization combined; and the remaining 28 were either incurable, or not benefitted by any of the means employed.‡ On the other hand, this practice has been fairly tried by others, but without success. In the year 1816, Sir Charles Bell had recourse to it in 16 cases of occult and open cancer, in the Middlesex Hospital, without any apparent benefit.§ My own experience of it has not been great. I have tried it, however, in several cases, and seen it practised by others, but without any decided advantage. It appeared to render the tumour harder and more compact, causing absorption, not of the diseased structure, but of the interstitial fluids, and surrounding adipose substance. It is, besides, a tedious and irksome process, to which few would willingly submit, if the slight chances of benefit were explained to them. Were it, however, to prove as successful in the hands of others as it appears to have been done in those of Recamier, it would certainly be a milder and more efficient plan than any of the others we employ. The good effects of steady and well-regulated pressure in dispersing indolent swelling have been well known to the profession. When these indurations are chronic, and not of a specific character, the advantages of compression in promoting absorption and suppressing arterial action are undoubted; but I cannot bring myself to believe that in genuine cancer of the mamma this practice will be entitled to the commendations it now receives. In an immense majority, if not in every case, scirrhus of the breast is of constitutional origin, and therefore not capable of being permanently eradicated by local means. Besides, it is not possible, even should we succeed in dispersing by compression a carcino-

* Cases of Cancer, &c., London, 1816.

† In estimating Recamier's success, it may be well to recollect, that the French physicians and surgeons are accustomed to apply the term scirrhus to every hard and indolent tumour, whether malignant or not, many of which would yield to proper local treatment. Were the disease to be entirely and permanently removed by compression, I would feel satisfied that it was not malignant, for I cannot believe that pressure, however carefully and methodically applied, can possibly subdue the *specific action* of the disease.

‡ Recherches sur le Traitement de Cancer, tom. i. p. 550.

§ Surgical Observations, vol. i.

matous tumour of the breast, that we shall, instead of insuring the patient's recovery, accelerate her fate. The specific and malignant matter of cancer must be carried into the circulation by the absorbents, so that we are only exchanging an external for an internal disease.

"3. *By Extirpation.*—This has long constituted our chief plan of treatment, and continues to be employed both as a means of cure and as a palliative.

"In a curative point of view, the operation of ablation of the mamma continues to be extensively practised; and of all local means we possess, it certainly holds out the best hopes of a permanent cure. If undertaken at an early period, when the constitution is but little impaired, and the countenance is unchanged—when the tumour is small, isolated, and indolent, and the axillary glands are sound, we are told that it seldom fails in eradicating the disease, provided all the morbid structure be removed. I admit, so far as the external disease is concerned, that its return to the same locality is often to be attributed to an imperfect operation, too much of the integuments or surrounding soft parts being left behind; but, at the same time, I have never seen a case, even of the most favourable description, in which the disease did not return, although every precaution was adopted to render the operation successful. We generally find that the disease is more extensive than we anticipated, and that, although we go far beyond its apparent boundaries, we seldom, if ever, succeed in preventing its reproduction. There may be points of disease in the absorbents, lymphatic glands, or surrounding adipose substance, so minute as to elude detection, or, as happened to Professor Camper and Sir A. Cooper, the absorbent vessels may carry the disease from the mamma to the glands *under* the sternum, where it could be neither discovered nor reached.

"The peculiar state of the system upon which the disease seems to depend, presents another and still more serious obstacle to the success of our operations. There are, unfortunately, too many cases on record, and of daily occurrence in practice, in which scirrhus of the mamma is shown to be, in its origin, not local. All the cases I have detailed point out the co-existence of mammary and internal scirrhus, or the rapid and fatal supervention of the latter form of the disease. I have frequently seen cancer of both breasts and of the uterus and breast, occur at the same time, and oftener still, the external cancer is complicated with disease of the lungs, liver, &c., in which organs its progress may be so obscure and insidious that we cannot fix its locality, or assign to it precise limits. We are therefore not authorised in promising success, even from the earliest ablation of the mamma, since we cannot assure ourselves or our patients that the tumour we extirpate is the only part that has undergone this morbid change.

"But the best of all tests for determining the efficacy of this operation is its success. It has been adopted for so long a period, and so generally, that were medical men to acknowledge candidly, and record faithfully, the results of their observations, we could have no difficulty in estimating the chances of ultimate success. Unfortunately, great diversity of opinion prevails as to its advantages; and whilst a considerable number of the profession acknowledge the liability of the disease to return, they are not less decided in recommending and performing the operation.

"Mr. Hill, of Dumfries, who published, in 1772, on the results of operations in this disease, seems, at first sight, to have met with greater and more permanent success than has fallen to the lot of any surgeon before or since his time. He operated upon 88 cases of all descriptions, and only one in seven of these had a return of the disease. But, on examining the details more minutely, we find that in five of the cases only was the mamma extirpated; that in two of these the wound did not heal; in another, the disease returned; and the remaining two continued well at the date of publication.*

"Sir E. Home has asserted that this disease is of local origin, and that it is capable of being safely and effectually extirpated.† Richerand, while he ac-

* Cases in Surgery.

† Observations on Cancer. London, 1805.

knowledges that the disease returns in about four cases out of five, either in the original situation or in some distant part, states at the same time that the proportion of permanent cures is such as to justify the operation.*

"Sir A. Cooper states, 'that a large proportion of cases return; but fewer than formerly, if the patient, immediately after recovering from the operation, undergoes an alterative course of medicine'† This implies that there is something wrong in the constitution, and that by rectifying this morbid condition, the return of the local disease is often prevented. It is acknowledging in fact, though not in direct terms, the constitutional origin of cancer of the mamma, and at the same time assigning to constitutional treatment more efficacy than I have ever seen result from it. I acknowledge the utility, in such cases, of attending to the uterine and alimentary functions; and I believe that if we shall ever succeed in controlling this formidable disease, it will be by acting on the general system; but as yet, we certainly do not possess any constitutional means of either warding it off or preventing its recurrence. Mr. S. Cooper states, 'that modern experience has given ample encouragement to the early performance of an operation, and even to making an attempt to cut away the disease, in every instance, both of the occult and ulcerated kind, when such a measure can be so executed as not to leave a particle of the cancerous mischief behind.'‡

"Professor Syme has met with 'repeated instances in which, though other circumstances were by no means favourable, the tuberculated kind of carcinoma was extirpated with the happiest result.'§

"Mr. Travers states, that 'the poison of cancer does not act upon the system during the integrity of the tubercles, since persons generally recover, and finally, in whom the disease is freely removed in this early stage. On the contrary, if the tubercle be softened, and undergoing ulceration or absorption, the disease recurs, however freely the parts be removed.'|| It does not accord with my experience, as I have already stated, that free operations in the early stage of the disease are generally followed by absolute recovery; nor can I subscribe to the opinion, that the system does not become contaminated until softening or ulceration of the tubercle occurs. I admit that absorption goes on more rapidly during the soft or ulcerated stage, but at the same time I have seen many cases in which the disease has been conveyed to the axillary and the subclavicular glands, and into the system, while the primary disease of the breast retained its original hardness and density.

"The utility of the operation has also been denied by many high authorities, both of ancient and modern times. Hippocrates,¶ Celsus,** Galen, and others of the older writers, are decidedly opposed to it. Dr. Alexander Monro had the candour to announce his great want of success, which seems to have discouraged, for a long time, many surgeons from having recourse to it. He only met with four cases out of sixty, in which the disease did not return within two years after the operation.†† In 100 cases operated upon by Boyer,‡‡ where the disease was seated in the breast or other parts of the body, not more than four or five were radically cured, in consequence of which he declares, and the same opinion seems to have been entertained by several eminent French surgeons of his day, that an operation ought never to be undertaken when the disease had been ascertained to be genuine cancer. Delpech also acknowledges that the operation is rarely if ever successful,§§ and the same opinion is entertained by a number of other authorities whom I need not mention. Believing that amid such discordant opinions we can only arrive at a just and satisfactory conclusion

* Nosographie Chirurgicale, 3e. edit., tom. iv., p. 424.

† Lectures, by Tyrrell, vol. ii., p. 198.

‡ Surgical Dictionary, article "Cancer." § Principles of Surgery, p. 392.

|| Medico-Chirurgical Transactions, vol. xv., p. 225.

¶ Aphor. xxxviii., Sect. vi.

** De re Medica, Lib. V., cap. xxviii.

†† Edinburgh Medical Essays, 3d edition, vol. v., p. 346

‡‡ Traite des Maladies Chirurgicales, tome vii., pp. 240, 241.

§§ Sur les Maladies Chirurgicales, tome iii.

by an appeal to facts, and an accumulation of individual experience, I feel myself bound to contribute the results of my limited observations towards the fulfilment of so desirable an object. The momentous question must be finally settled by the combined experience of the profession, and not by a reference to the records of our hospitals and infirmaries, where we find the cases dismissed as cured as soon as the operation wound has healed.

"Of thirty-two cases operated upon by myself, in which the carcinomatous nature of the disease was distinctly ascertained, the cure was not permanent in a single instance. The ages of these patients varied from 42 to 59 years; 23 were married and had children, and nine were unmarried. In eighteen cases the right breast was the seat of the disease; and in fourteen, the left. In twenty, the glands in the axilla were more or less affected, but not extensively; they were all removed, and in the remaining twelve no disease in the axilla could be detected. In ten the disease was in the form of tubercle; and in twenty-two the whole gland was affected. In nine cases the disease returned in the integuments of the chest, or in the axilla, within a period varying from six weeks to three months after the operation; in thirteen cases, from three to nine months; in four, from nine to twelve months; in three, within two years; and in one, nearly three years elapsed before its return was discovered. Two of the operations proved fatal; one from pleurisy, and the other from erysipelas. In many of these cases symptoms of pulmonary and hepatic affections were well marked, and seemed to have occasioned death; in others the symptoms were too obscure to lead to accurate diagnosis. The lungs appeared to be most frequently implicated, but the proportion cannot be accurately stated, as in several of the cases no post-mortem examination could be obtained.

"Besides these cases which have occurred to myself, I have, on inquiry of a few of my medical friends, who have had opportunities of witnessing this disease, ascertained *the results of 86 additional cases*, in which the mamma was extirpated for well-marked carcinoma, and in not one of these was the cure permanent. Without going into details, I may shortly state, that in a majority the operation was performed at an early period, and under the most favourable circumstances; the affected parts were freely and extensively removed, and in many there was no distinct indication of constitutional deterioration; yet in all the disease returned, both externally and internally, and proved fatal. It was also observed, that in robust women of a sanguineous temperament, the reappearance of the disease after the operation, and its subsequent progress, were more rapid than in those of a nervous or lymphatic temperament, and that the internal organs were sooner affected.

"It sometimes happens, especially when the disease occurs in very old persons, that it may remain for many years in a quiescent state, without much pain or tendency to shorten life. The anxiety of mind arising from a knowledge of the nature of the disease, sometimes induces such patients to forego the comparative tranquillity they enjoy, and attempt to free themselves of the disease by an operation. I could adduce several patients who had laboured under the malignant disease, for ten, fifteen, and twenty years, and who were cut off in three or four months by an operation.

"Ablation of the mamma is also recommended and practised as a palliative, in cases where there is no prospect of a radical cure. It is had recourse to chiefly in the ulcerated stage of the disease, to rid the patient of pain and annoyance arising from the presence of an open ulcer, and the foetid discharge proceeding from it. Seeing that we have other and milder means of soothing the distressing symptoms, and mitigating the patient's suffering, I must confess that this painful and dangerous procedure, and for effects so partial and inefficacious, appears to me cruel and unjustifiable; and I am satisfied from what I have seen, that by it the progress of the disease is painfully accelerated, the knife appearing to rouse it into fatal activity.

"Of late years it would appear that in the hands of some surgeons the knife has frequently succeeded, and there seems to be rather an increasing confidence in its efficacy, and a disposition to employ it, under the belief that it will cure

the disease. There are certainly on record a good many cases in which no relapse took place; and we find at the present moment women alive upon whom the operation was performed years ago. But after the unfortunate results I have detailed, the question naturally occurs, 'Were these cases of genuine cancer?' We often meet with tumours in the female breast of a benign character, which so greatly resemble scirrhus even in their structure, as to render it difficult for us to classify them. Indeed, in the majority of mammary tumours which present themselves to our notice, the disease is not malignant at all, but consists of an indolent enlargement of the gland, of an adipose tumour, a deep-seated chronic abscess, a strumous tubercle, or of a hydatid cyst. In some of these cases even the most experienced may be deceived, and be led, from the disease not having returned, to assign more value and importance to the operation, than it is justly entitled to, and thus to take credit for cures which were never performed. When these mistakes, which are by no means uncommon, originate in ignorance, they may be pardoned, as we are all liable to them; but when the real nature of the disease is designedly concealed, and they are held out as cases of cancer cured by operation, we cannot but lament that there should be found in the profession an individual or individuals so devoid of honesty and candour as to attempt to mislead, in a matter of such serious importance.

"It may appear to some that I have taken too unfavourable and gloomy a view of the results of operations for the cure of this formidable disease. If I have done so, it has not been done hurriedly or unadvisedly. The painful truth has been slowly and reluctantly forced upon me, by an uninterrupted series of unsuccessful cases, and I feel myself bound to state as my decided and conscientious opinion, that in no stage or form of the disease is an operation to be depended upon, either as a means of permanent cure, or as a palliative. On the contrary, I believe that while it never arrests, it almost uniformly accelerates the progress of the disease. Why should we, therefore, continue to recommend and practise it? Why subject our patients to the torture and risk of an operation which we believe to be not only useless but injurious? It would be better for our patients, and more creditable to surgery, were the operation altogether abolished; and the melancholy fact at once acknowledged by the profession, and made known to the public, that we cannot eradicate the disease by the knife; but that still much may be done, and by milder means, to alleviate the painful symptoms which attend upon it.

"By refusing to operate upon what is usually considered a favourable case, it may be said that we are depriving the patient of the only chance she has of recovery, and consigning her to a state of hopelessness and misery. It is surely better, by a candid statement of facts, to dissuade from an operation which we believe to be useless, than to hold out prospects of a cure which will never be realized. The operation is submitted to only under belief that it will eradicate the disease, and when it proves ineffectual, the mental as well as the bodily condition of the patient is worse than if it had never been performed. It is doubtless a painful duty to be obliged to confess our inability to afford the relief and assistance which is expected from us; but would it not be more discreditable to our professional character, were we, in the teeth of accumulated observation and daily experience, cruelly to persist in operations which have been found not only useless but pernicious? By persisting in such a practice, we are doing an act of gross injustice to our patients, without having the candour to forewarn them of the result; and by resting contented with the operation as a means of cure, which every day's experience tells us that it is not, we are retarding the improvement of our profession, and preventing the talents and energies of its members from being directed to other remedial sources, from which we may yet obtain means more effectual than those we now possess, for eradicating this formidable disease."—*London Medical Gazette*, June 2, 1838.

36. *Etiology of Club-Foot*.—M. MARTIN, in a memoir communicated to the Royal Academy of Medicine of France, endeavours to prove that this deformity in all

cases results from a deficiency of the liquor amnii, in consequence of which the uterus, he says, exerts a direct pressure upon the feet and deforms them. The author endeavours to explain the varieties of the deformity by the relative position of the feet at the period when the uterus compresses them, and asserts that the mothers always experience, about the fifth or sixth month, violent and often unsupportable pains near the epigastrium when the fœtus is in the vertical position, and in the hypochondriæ when the fœtus is transverse.

Every accoucheur of much experience must have met with cases of great deficiency of liquor amnii where there was no deformity of the infant's feet; and in some cases where there is an unusual quantity of liquor amnii the deformity occurs. Two cases of this last description were mentioned to the Academy by M. Capuron.—*Gazette Méd. de Paris*, June 9, 1838.

39. *Aneurism of Right Subclavian—Operation—Death.* Mr. Liston recently applied a ligature to the right subclavian, and one to the right carotid arteries, for the cure of an aneurism of the right subclavian. Mr. Liston was led to try this method instead of the plan of applying a ligature to the innominate, as adopted by Graefe, Mott, and Lizars, from the following considerations:

"The object of a ligature is first, to bring the inner surface of the vessel in contact, and to produce a coagulation of the blood in the vessel both before and beyond the ligature, the base of each clot, which assumed the form of a cone, being towards the ligature, its apex from this point: a barrier was thus formed which favoured the process of adhesion and permanent closure. Now, to effect this purpose, it was essential that there should be no vessel immediately before or beyond the ligature, the flux or reflux of blood from which, into the part, would necessarily interfere with the formation of the clot. Now, two arteries, as in the present case, when tied, were more likely to remain permanently closed than would the arteria innominate, had a ligature been applied to it. The application of a ligature to the latter vessel must be attended with some puckering from its magnitude. Its close vicinity to the heart, and the circumstance, also, of the left carotid frequently coming off near the root of the innominate, would leave little chance of the formation of a coagulum. By tying the subclavian, as practised in this case, the flow of blood to the aneurism would have been interrupted; but, if the carotid had not also been tied, there would have been little probability of the formation of a coagulum."

On the eleventh day after the operation hæmorrhage from the wound took place; the patient sunk and expired on the thirteenth day.—*Lancet*, August 4 and 11, 1838.

40. *Obstacle to the passage of the Fæces after the reduction of Strangulated Hernia;—means of remedying it.*—It sometimes happens after the reduction of strangulated Hernia by the taxis, but still more frequently after reduction, when the stricture has been divided with the knife, that the pathological consequences of the strangulation, i. e., the interruption to the passage of the fæces, continues and endangers the life of the patient. M. Tessier ascribes this condition of things to a paralysis of the portion of the intestine above the stricture, and a contraction and inflamed condition of the intestine at the points included in the stricture. M. Tessier had been led to this opinion from the examination of patients who died after the operation for strangulated hernia; and in whom the passage of the fæces did not take place. He found the portion of gut above the stricture much distended and inflamed, and the part below much contracted. Hence he advises that in all cases after the operation, the fæces should be made to pass through the constricted part. The general custom is to resort to enemata after the operation. These, M. Tessier thinks, if not useless, at least rarely effectual. They merely empty the lower intestines; and often mislead the patient into the belief that a restoration of the passage of the fæces is entirely effected. M. Tessier advises the bold use of active purgatives; and says he has derived the best effects from their use.—*Archives Générales*, March, 1838.

41. *Physiological views relative to Vesico-Vaginal Fistula, and Laceration of the Bladder and Vagina.* By Professor DIEFFENBACH. Before I commenced the study of medicine I had occasion to witness an operation for the cure of vesico-vaginal fistula, performed by one of our most celebrated surgeons on a young woman, in whom the accident had been produced by difficult labour. The operation lasted several hours, and consisted in an attempt to pare the edges of the fistulous opening with the scissors, and afterwards unite the wound by suture. There was little effort made by nature to heal the wound, and the woman died in a few days from violent inflammation of the bladder and peritoneum.

During my stay at Paris, fourteen years ago, I had an opportunity of seeing a patient whom Dupuytren had cured of a narrow vesico-vaginal fistula, by cauterizing its edges with a red-hot iron, introduced into the vagina by means of a speculum. Remembering the precepts of Dupuytren, that sutures were of no avail against the injurious influence of the urine on the wound, and that nothing but the actual cautery was sufficient to excite the necessary degree of action in the edges of the fistula to produce full granulation, I tried this means in several cases of fistula not larger than a hazel-nut in circumference, but I failed in every case. Two attempts made anterior to this by Drs. Baum and Mayer were equally unsuccessful.

Some time after these experiments, a woman of weakly constitution, 50 years of age, came under my care, with a peculiar vesico-vaginal fistula; not the result of labour, but from a tumour which had spontaneously opened into the vagina. The external orifice was half an inch behind the clitoris; a fine elastic bougie passed obliquely backwards into the bladder. The urine was discharged periodically; and the woman was sometimes several days without passing any through the fistulous opening. The latter was finally healed by washing, and injecting the tract with decoction of chamomile flowers, and touching its edges with the tincture of cantharides, the catheter being at the same time employed.

I was equally fortunate in a second case, which, like the one just mentioned, was very mild. A vesico-vaginal fistula, opening an inch behind the clitoris, was produced as a result of difficult labour in a woman of 30 years of age. The tract ran obliquely backwards, and communicated with the bladder itself, as I was convinced by careful examination. In this case also the passage of urine through the fistula was only periodical. The treatment, successful in the former case, was repeated, but without any benefit for five weeks. I then freely slit up the anterior portion of the fistulous tract, and afterwards reunited it with a point of suture: a catheter was kept in the bladder, and the parts frequently bathed with cold water. However, on the third day, the thread had cut through one edge of the wound, and a few drops of pus, mixed with urine, flowed out; warm poultices, with chamomile fomentations, were immediately applied to the genital organs; and, after a lapse of eight days, I began by stimulating the tract of the fistula. By this means the orifice of the fistula was closed in about four weeks; however, in a short time after, a small quantity of urine escaped through an opening which was almost imperceptible; I therefore dilated this minute canal with a fine cat-gut cord, and was fortunate enough to heal it at length by stimulating the parietes with strong tincture of cantharides.

I now conceived some hope of being able to relieve the distressing accident by surgical means, but this hope was sometimes disappointed. I found out five unfortunate women with vesico-vaginal fistula, two of whom had already claimed my assistance at an earlier period. The largest of these fistulous tracts permitted the index finger to pass into the bladder; a very fine sound could be passed with difficulty through the smallest one. I treated all these patients with the actual or potential cautery, but without any good result; I then operated on two by refreshing the edges of the fistulous tract, and uniting them by suture; this was accomplished with considerable difficulty, but the fistulous orifices remained unchanged.

I now renounced all attempts at interfering with this accident until a few years back, when I was called in to treat the case of a Russian countess, who suffered from vesico-vaginal fistula, produced by an unfortunate operation. The

lady had been delivered by an ignorant midwife; inflammation of the vagina set in, and the parietes of this canal became subsequently completely united together; the consequence of this accident was, retention of the menstrual fluid, with all its unpleasant symptoms. After the lapse of a year the patient consented to an operation; but the surgeon, unhappily, made a large incision into the bladder, which continued open, while the divided parts of the vagina soon reunited again. Shortly after the patient's arrival at Berlin, I made the first attempt at closing the fistulous orifice, which presented itself about an inch behind the clitoris, and easily admitted the little finger. The edges of the orifice, being fixed with a hook, were pared off, and then united with three stitches; a catheter was constantly kept in the bladder. However, on the third and fourth days, the stitches had cut through the edges of the wound, and the urine continued to flow as usual through the vagina. Soon after this unsuccessful attempt I was called on to re-establish, if possible, the canal of the vagina. This operation was excessively difficult, for the parietes of the canal were closely united together, and it was almost impossible to ascertain its direction. The canal was, however, re-established, and the cervix uteri could be felt very small and high up in the pelvis; the reunion of the divided parietes was prevented by the usual means, and this part of the treatment terminated in a fortunate manner. Our attention was now directed anew to the fistula. Without again touching the edges, I introduced fresh sutures, three lines from the edge, and drew them tightly, trusting to the inflammation which the ligatures would produce. During six days the urine passed through the natural passage, and on the seventh I divided and removed the sutures.

The cure now appeared to be perfect; however, I was suddenly sent for at twelve o'clock the next day; the urine had again passed through the vagina. On examination, I found the fistulous orifice as large as before, with deep red edges, and learned that the accident set in immediately after an injection made by one of the attendants; it was probably a consequence of mismanagement in the use of this instrument. In spite of this discouraging result, I made a fresh attempt, some weeks later, to unite the opening with the suture, but the threads became loose in four days, and the unnatural course of the urine was re-established. The patient was willing to undergo any further operation judged necessary; but, unfortunately, family affairs compelled her to leave Berlin.

As one of the chief causes of unsuccess in cases of this kind depends on the difficulty of refreshing the edges of the wound, and applying the suture with exactness, I endeavoured, in the next case which fell under my care, to bring the fistulous orifice so far down with a hooked forceps as to enable me to place the stitches with security. Three years ago a woman, 50 years of age, placed herself under my care for a vesico-vaginal fistula. The opening was situate in the middle of the vaginal wall, and would have received the tip of the little finger. I drew down the wall of the vagina with a hooked forceps, and applied three sutures. However, violent inflammation of the bladder set in, and the patient died on the fourth day after the operation.

The results now stated induced me to change the method of treatment, and employ an altogether new operation, towards which my ideas were in part directed by the peculiar nature of the malady.

An unfortunate young woman, 28 years of age, sought my assistance for a large communicating opening between the bladder and vagina. The accident had been produced, as usual, in consequence of difficult labour, and gave rise to the most disagreeable inconveniences. The external genital organs were red and excoriated from the constant passage of the urine, which irritated, in equal manner, the inside of the thighs, knees, and calves of the legs. It was difficult, at first, to discover the fistulous orifice with the finger; however, on passing the speculum, the large opening came to view, and through it a portion of the bladder, with its inner membrane of a velvety appearance. The patient being placed in the position for lithotomy, with the legs widely separated, Ricord's speculum was introduced into the vagina, and on opening its branches the fistulous orifice was fully exposed to view. The second period of the operation

consisted in drawing down the parietes of the vagina. This was accomplished by passing a long hook through the speculum into the tissue lying behind the orifice; then fixing a second hook on the opposite side, in a similar manner, and withdrawing the speculum with the left hand, while the right acted on the vaginal parietes. The manœuvre was somewhat similar to that by which Lisfranc draws down the os tincæ in cases of scirrhus. The vaginal wall having been brought down, it remained to bring it fully in view. This was done by continued, but gentle, traction, and constituted the third period of the operation. Single and double hooks were fixed all around the orifice, some of which were confided to assistants. The next part of the operation was to refresh the edges of the fistulous opening. I passed, for this purpose, a very fine scalpel, about one line from the edge, and cut off a strip one line broad from the parietes of the vagina and bladder together.

This was followed by an attempt at separating the edges of the bladder from the vaginal edge; the former was fixed with a hooked forceps, and both tissues were then separated from each other to the extent of two lines with the scalpel; this gave a surface for union from one to two lines broad. I now began to bring the edges of the orifice together by passing some sutures with curved needles through the posterior part. Seven points of suture were applied in regular order; they alternately comprehended the parietes of the vagina and bladder; the threads were cut off three inches from the knots. The vagina was now cleaned out with injections of cold water, and the speculum again introduced to see if every thing was right; the edges of the wound seemed united in the most equal and perfect manner. The patient appeared quite gay after the operation, and was carried home to some distance from the hospital in a common car. A catheter was left constantly in the bladder, and a quantity of cold water injected every half hour into the vagina and bladder. The rest of the treatment was strictly antiphlogistic.

This operation was not followed by any accident. On the third day I again introduced the speculum, with the greatest precaution, and found all the sutures undisturbed and firm; most of them were concealed from view by the tumefaction of the vaginal mucous membrane. On the fifth day the speculum was again employed, but no change had taken place in the sutures. On the sixth day a single suture was seized, divided with a fine bistoury, and withdrawn; the other six were subsequently removed in the same way without any accident, and every point of the fistula found well closed; the cure, in a word, appeared complete. From this time cold injections were alternately thrown up the vagina, with warm decoctions of chamomile. However, on carefully examining with the speculum, I discovered that from time to time a few drops of urine escaped from the left side of the opening left by a single point of suture; this I hoped to close by exciting some local inflammation. For a period of four weeks I stimulated it with the most powerful remedies, concentrated tincture of cantharides, &c, introduced on a fine miniature pencil, but without producing any trace of inflammation or granulation about the edges. It seemed necessary to treat this minute opening in the same way as the larger one; the parietes of the vagina were accordingly drawn down, the edges pared, and a suture applied. For the first three days after the operation every thing went on well; on the fifth day, however, the suture became a little loose, and some urine escaped through the small orifice as I withdrew the thread. After a lapse of ten days I again repeated the operation. The portion of vagina in which the opening lay was drawn down with hooks, a margin nearly two lines broad was pared off, and two strong points of suture were applied. This time the operation was crowned with full success; on the fifth day the sutures were withdrawn; the fistulous orifice was closed at every point. The woman continued from this time perfectly free from any accident; the excretion of urine was perfectly normal. On examining with the speculum, the cicatrix was visible, extending about an inch and a half in a transverse direction through the parietes of the vagina.

The case just mentioned was the means of procuring me the opportunity of seeing, within a few weeks, twelve individuals labouring under the disease now

in question; they all required to be treated without delay, and all knew several other women who suffered from the same accident. The extent of the disease in these twelve cases is very different. In some the orifice is very small; in others, the communication between the bladder and vagina is large. The smallest admits only a very fine probe, while others give passage to the little, or even index, finger; finally, some will admit the passage of several fingers united into the bladder, which prolapses through the abnormal opening. In one case the uterus and vagina are prolapsed, and the perineum lacerated completely back to the anus. I have radically cured the latter accident by the method of operating I employ. The most unfortunate of all the patients is a woman 30 years of age, healthy and strong. The whole anterior wall of the vagina is split up, from behind the orifice of the urethra to the os uteri, and the bladder hangs down between the thighs, and is inverted; there is also complete rupture of the perineum, and the anus, with a part of the rectum, is equally torn through. For seventeen years this unfortunate woman has been compelled to sit on a seat made for the purpose, the excretions of urine and fæces passing away under her. I shall operate on all these patients one after the other, and communicate the results, whether they be fortunate or otherwise, for the interest of humanity and the advancement of our art.


If we examine the cases mentioned in the first part of this notice, to discover the causes of vesico-vaginal fistula, we shall find that in one case the accident was produced by an attempt at separating the united walls of the vagina, during which the surgeon made an incision directly into the bladder.

In another case the fistulous opening was produced in consequence of a calculus in the bladder; upon which the child's head was strongly pressed during labour. Besides these cases, which are all extremely rare, there were several occasioned by perforation of the bladder from cancerous disease of the uterus or vagina. In one case the carcinomatous tumour had commenced at the orifice of the urethra, produced union between the neck of the bladder and the vaginal wall, and thus laid a foundation for this lesion. In several other patients—in addition to the cancerous disease of the uterus or vagina, with fistulous opening into the bladder, there also existed a cancerous fistula between the vagina and rectum, with stricture of the latter intestine; and, finally, in one terrible case, a large communication between the bladder, vagina, and rectum together. Of the above twelve mentioned cases, eleven occurred as a result of difficult labour.

Writers have pointed out several other causes of vesico-vaginal fistulæ. In some cases the accident has followed lithotomy, especially after the vesico-vaginal method. It has also followed simple puncture of the bladder from the vagina, in the same way as in man; puncturing the bladder by the rectum, sometimes leaves behind it a vesico-rectal fistula. Lesions of the bladder, from metallic sounds, may also produce this fistula, and that chiefly in cases where the bladder is diseased. Sometimes sharp-pointed calculi being lodged in a sacculated portion of the bladder create inflammation of the part, and make their way into the vagina; but even without the presence of calculi the appendices vesicæ, described by Morgagni, may also give way, and produce a communication between the two cavities.

Mercier (*Gaz. Méd. de Paris*, April 26, 1836,) describes a new species of spontaneous "perforation of the bladder not hitherto mentioned by authors," and depending on a species of sacculated bladder different from that described by Morgagni. However, he does not give any case of the disease in females. In some cases of difficult labour the accident is produced either by improper measures, or from the action of a fragment of the child's skull. However, the far greater number of cases are simply the result of difficult labours, whether instruments were applied or not. Kilian, in his excellent work on Obstetrical Operations, says, that most cases depend on the use of instruments, especially the perforator.

The very small vesico-vaginal fistulæ with which we sometimes meet, are produced in a different manner; we can only attribute them to pressure of the

child's head on a very limited point of the vagina, for the action of a forceps or other instrument could never produce an opening larger than a millet seed. I believe these very small communications are produced during excessive distension of the vagina by a large head, by rupture of a mucous follicle, and its sy-

 jacent tissue, into the bladder. I have always found the external opening of small fistulæ so contracted and sunk into the substance of the vaginal wall, that it was very difficult to find the orifice. I have already spoken of the varieties of these fistulæ present in respect to size. As to form, they are always round, when of a moderate size. When situate near the os uteri, and large enough to admit a good-sized catheter, the entrance is sometimes tortuous; if large enough to admit three fingers into the bladder, the opening is commonly oval, with the smaller end directed backwards and forwards; even the fistula produced by an incision into the bladder presented a circular orifice. It is unnecessary to say, that fistulæ resulting from syphilitic or carcinomatous ulcers offer no determinate form.

The situation of vesico-vaginal fistulæ is very various: in some cases I found the orifice about one inch behind the mouth of the urethra; sometimes further back; at other times, finally, as high up as the os uteri. They are seldom situate at any great distance from the middle line of the vaginal parietes. Kilian, Jobert, and several other writers remark, that the accidents are more or less severe, according to the situation of the fistulæ; for example, when high up, the urine comes away only at times, and when the bladder is very full. However, I have always found the patient wet, no matter whether the opening was situate low down, in the middle, or very high in the vagina. Even the greater or less extent of the orifice seems to make little difference; the women were as constantly wet when the opening into the bladder was not larger than the point of a sound, as when it would admit the index finger. It is evident, however, the accidents must be greater in extensive destruction of the vagina and bladder.

The inconveniences resulting from vesico-vaginal fistulæ are of the most deplorable kind. Those connected with the married state do not require explanation. The constant passage of the urine into the vagina must necessarily produce considerable irritation, and even inflammation; the external genital organs, the perineum, insides of the thighs, and the legs, are exposed to the same injurious actions; the skin assumes a bright-red colour, and is partially covered with a furuncular eruption. The patients complain of a most disagreeable burning and itching sensation, which often compels them to scratch themselves until the blood comes forth, and thus aggravate their sufferings. Others are obliged to shave off the hair from the external organs, which are sometimes covered with a calcareous deposit from the urine. Frequent washing with cold water is of little avail, since the linen is quickly saturated with the fluid which escapes. Position also avails little, and the bed, even when consisting of a hair mattress, is quickly soaked through, and emits a most disagreeable odour; the wretched patients themselves are compelled to pass their lives on a straw bed, the materials of which are changed every day. The air in the chambers of such patients acts injuriously on their lungs, and wherever they go they taint the atmosphere. Washing and inunction are attended with no advantage. Perfumes only increase the disgusting effect of the smell. This unhappy accident breaks through all family ties; the most tender-hearted mother is driven from the society of such an afflicted child; she is confined to a solitary chamber, or sits on a perforated stool of naked wood, or a plank, with an open window to the apartment, unable to cover the seat with any cloth. Some of these unhappy patients fall into a state of indolence; others present a stupid resignation; while others would willingly resign their lives to get rid of the misery which surrounds them. It is impossible to find any alleviation of the accidents by mechanical contrivances. The introduction of a sponge, saturated with cold water, prevents the discharge of urine for a few hours, in cases where the fistulous opening is small. However, the sponge soon becomes saturated with urine, and produces disagreeable sensations, which render it insupportable to many females. All attempts at filling the vagina, and thus preventing the influx of urine, have failed. The

different contrivances for receiving the urine which flows into the vagina are also equally useless, and I have seen many cases in which they aggravated the evil instead of relieving it.—*Lancet*, August 27, 1836, from *Berlin Med. Zeit.*, June, 1836.

42. *Examination of some of the methods of treatment proposed for the cure of Vesico-Vaginal Fistula and Laceration of the Bladder and Vagina.*—By Professor DIEFFENBACH. 1. Cauterizing and burning the edges of the fistula, have produced the least beneficial results amongst the various methods which have been employed. In general, authors say it is not applicable when the loss of substance is great, and should be reserved for cases of small fistulous openings; but, even for the latter, it does appear to me to act in a very favourable manner. According to my experience, I would only employ the cautery in cases of fistulæ lying near the neck of the uterus, and hence brought to view with the speculum.

2. Sutures. *a.* The suture and other means of obtaining union without refreshing the edges of the wound.

When the surrounding tissues are very firm; when the fistula is not larger in diameter than one's finger; when the parietes of the bladder cannot be separated from the vagina, without considerably dilating the opening, I prefer the application of the ligature to every other method.

After having drawn forward the parts, the surgeon should pass a curved needle, armed with a thick ligature, through the cellular tissue uniting the bladder and vagina, so as to embrace, circularly, the opening, a few lines from the edges. If one ligature be insufficient to bring the edges of the fistula in contact, two or three more stitches may be applied. I obtained, by this method, the most happy results in the case of a Russian officer, who had lost a portion of the urethra, near the middle of the penis, from a musket shot.

b. The suture, after previous cauterization, or refreshing the edges.

The simple suture, is the best operation in all cases where the fistula is sufficiently low down to be got at with facility. When additional means are necessary, it is not easy to determine whether we should employ cauterization of the edges, or merely refresh them with a cutting instrument: the former, however, may be had recourse to, in cases of vesico-vaginal fistula, with more advantage than in cases of division of the palate, when staphyloraphy is performed. The greatest difficulty in the use of the simple suture is, that, after refreshing the edges of the opening, the latter is apt to assume a rounded appearance; hence it is useful to touch the edges, before we apply the suture, with a hot iron, or a substance calculated to stimulate them powerfully.

Several surgeons recommend us to apply as few sutures as possible, and not to draw the threads too tight: I follow an opposite practice; it is necessary to excite adhesive inflammation along the whole edge of the wound, and that as quickly as possible, in order to prevent the noxious effects which would be produced by any infiltration of the urine.

Professor Lallemand has lately directed attention to an instrument which he has invented for the cure of vesico-vaginal fistulæ: this consists in an elastic silver catheter, furnished at one end with a hooked forceps, and which is intended to keep the edges of the fistula in contact after they have been cauterized. The instrument does not seem to me well calculated to obtain the end proposed; a solid union cannot be obtained by bringing the posterior edge of the opening in contact with the anterior one; the passage of urine is not sufficiently prevented, and the constant action of the spiral spring which keeps the forceps applied, has the disadvantage of cutting through the tissues before they have time to unite. Both Killian and Velpeau agree with me in this opinion.

3. Cure by the Taliacotian method.

Jobert succeeded in closing a large communication between the bladder and vagina, by transplanting a portion of tissue from the neighbouring parts and applying it over the opening. The skin of one of the labia majora, having been closely shaved, was dissected off, and united by sutures over the opening; the operation succeeded in the happiest manner, but it may be feared that the repro-

duction of hair within the cavity of the vagina, may produce several unpleasant inconveniences. The operation, however, may be varied in the following manner:

1st. By closing the opening with the mucous membrane of the bladder. 2dly. By implanting a layer from the neighbouring membranes of the vagina.

The first of these methods is only applicable when the fistula is moderately large; when a small portion of the bladder projects through it, and, perhaps, is already adherent in several points. Here, by frequently touching the edges with the *tinctura canthar.*, we may endeavour to excite adhesive inflammation; or, if it be thought necessary, the vesical mucous membrane may be drawn with a hooked forceps, a little more through the fistula. Should adhesion at length take place all round, the superfluous part is to be destroyed with the nitrate of silver.

The second method I would propose, is to transplant a portion of the vaginal membrane over the opening; this is applicable to cases in which the fistulous orifices are very large, where it would be almost impossible to bring their edges together by suture, &c.

Whenever the parietes of the vagina are destroyed in their whole thickness, the operation is to be performed in the following manner:

The first difficulty which the surgeon encounters, is produced by prolapsus of the bladder, which commonly hangs down through the vagina; it must be carefully returned, and supported by a piece of soft sponge introduced into the orifice of the fistula; this done, one edge of the opening is to be seized with a hooked forceps and drawn forwards; the action of this instrument being aided, when necessary, by several others of the same kind; the surgeon next perforates, with a fine scalpel, the posterior part of the edge of the fistula, and pushes this instrument, with a sawing motion, through its anterior external edge; an assistant must keep the strip of tissue, thus removed, constantly on the stretch.

To obtain a broad surface for union, the vesical layer of the edge of the opening must be dissected away for a few lines from the vaginal layer, and when this is accomplished, the refreshing of the edges of the wound may be completed. It now remains to bring together the edges of the large opening which presents itself. For this purpose, I pass two strong metallic (lead) ligatures, by means of my instrument for split-palate, through the vaginal layer of the fistulous orifice, opposite its middle part, and about an inch distant from each other. The ends of the ligatures, which hang out through the vagina, are then twisted together, and in proportion as this is done, the edges of the wound are forced to approximate. When the tension of the vaginal parietes has been carried as far as prudence will permit, the surgeon proceeds to form the two lateral flaps, which are to close up the rest of the opening. Having previously emptied the rectum, and having introduced his left index finger into that intestine, in order to guard it, the surgeon makes an incision, commencing at the inferior and posterior part of the lateral wall of the vagina, and continues his incision forwards to the nympha; a similar incision is then made on the opposite side. The breadth of the portion of the vagina thus isolated, should not exceed one-third of the breadth of the organ itself: when the incisions have been continued sufficiently deep and long, the ligature may be again twisted, and the surgeon will find that he now can bring the edges of the wound still closer to each other. The loss of substance is, however, still too great to allow immediate closure of the fistula, a condition necessary for cure; the surgeon must therefore proceed to "*dissect off the lateral flaps from the vagina*," and, having done this, completes his operation by uniting the edges of these flaps with the common suture. The vagina must now be washed out with cold water, the patient placed in bed, and a larger catheter introduced into the bladder.

Even should no union, or only a partial one, take place after the operation, we obtain benefit so far, that the large opening between the bladder and vagina is converted into a small slit.

Jobert says, "M. Velpeau advises us to close the fistulous orifice by the posterior wall of the vagina, which is to be brought forwards; but before we can judge of this method, we must wait until its author has practised the operation."

Vidal de Cassis has latterly put forward a very peculiar idea on the operation

for the vesico-vaginal fistula; he proposes closing up the vagina altogether, and thus converting it into a second reservoir for the urine. In cases where the whole parietes of a portion of the vagina have been destroyed, and the bladder hangs down between the thighs, we certainly should be very fortunate if we could retain the urine by closing up the vagina; the objection made against it of the danger of exciting inflammation, &c. in the mucous membrane of the vagina, is of no value, for experience proves that the latter can bear the contact of urine without any inconvenience. The method is, evidently, only applicable to very large fistulæ; but the idea is ingenious, and I am anxious to hear more of the effects of an operation which bears some analogy to that of Fricke for prolapsus uteri.

I cannot close these observations without saying a few more words on the operation which I have found most practicable. The rectum must previously be well emptied. The patient is to be placed in the position commonly chosen for lithotomy, and five or six assistants are indispensable. A few minutes before the operation, I inject some cold water into the bladder, which, passing through the fistulous opening, has the effect of cleaning its edges from blood, while the latter are being refreshed with the knife, or of indicating the exact situation of the fistula should it be small. Having introduced the valved speculum, the surgeon seizes the vaginal mucous membrane, near the fistulous orifice, with a hooked forceps; then removes his speculum, draws down the parietes of the vagina, and removes a strip of membrane with his bistoury, so as to refresh the edges of the fistula.

When the opening is large, the vaginal edge must be separated to the extent of a few lines from the vesical edge of the fistulous orifice, in order to obtain a broad surface for union: when the fistula is very small, this is impossible; in such cases I remove a funnel-shaped portion of tissue, the middle of which corresponds with the fistula, while the apex terminates in the bladder; this gives a surface sufficiently broad for union. The wound is now cauterized, by employing the cylindrical speculum of Dupuytren, or of Kluge, and the sutures are applied on the second or third day, when the edges of the wound present a red, inflamed surface. When the parietes of the vagina are easily drawn down, I apply the interrupted suture with the fingers, by means of small, very long, and curved needles: but when the tissues are unyielding, I am forced to employ needles, like those I use for the operation of split-palate, and to introduce them with a handle. The ends of the ligatures are easily tightened with the fingers; they may either be cut short, or left to hang out of the vagina. As soon as the patient has been placed in bed, an elastic catheter must be introduced into the bladder, and a short funnel-shaped tube into the entrance of the vagina; every half hour some cold water must be thrown up through both tubes, more with the intention of diluting the urine, and preventing its action on the edges of the wound, than as an antiphlogistic means.

The speculum must not be introduced for the first few days: on the fourth, fifth, or sixth day, the sutures may be removed by introducing a small speculum, and cutting them through with a long scissors.

Should any of the sutures have cut through the tissues without producing union, or if the operation have failed, the edges of the wound must be frequently touched with the tincture of cantharides; should the latter means fail, as, indeed, it commonly does, the operation must be repeated again and again, as often as the patience and condition of the unfortunate woman will permit.

When the patient is young and strong, the after-treatment must be strictly antiphlogistic; general and local blood-letting during the first few days; in a word, I treat my patients, after this operation, as I would treat individuals labouring under a penetrating wound of the chest or abdomen; when cystitis sets in, I apply the leeches directly to the vagina.

The nourishment should simply consist of some mucilaginous drink; the only medicine I am in the habit of giving is some *oleum ricini*, with laurel water. If the patient be attacked with diarrhœa, I administer the *decoctum althææ*, or *emulsio amygdalina* with the above-mentioned laurel water.

It would lead too far were I to enter into further considerations on this point: it is enough to say that the operation is always a dangerous one, chiefly on account of the injury which is done to the bladder; the suture always producing more or less inflammation of the edges of the fistulous opening, or of the surrounding parts.—*Ibid.* July 29, 1837.

43. *External Application of Calomel to Chancre.*—Dr. EDWARD J. BURTON, surgeon British army, has adopted the following treatment for chancre, and he states with unvariable success. He applies the nitrate of silver to the sore, and then covers it with lint; this he removes in twenty-four hours. He then covers the sore with calomel, applying the lint as before; this dressing is also removed in twenty-four hours, and a similar one then applied. A third application often entirely cures the ulcer.—*Ibid.*, 30 June, 1838.

44. *Clinical Lecture on Fibrous Cysts in the Ham.*—By Sir WILLIAM LAWRENCE. There is in the hospital (St. Bartholomew's) at present, a patient with a tumour in the ham, in the situation of popliteal aneurism. Although the disease in this case is not of very rare occurrence, and liable, by its situation, to be confounded with other affections, I cannot refer to any surgical work for an account of its characters, nature, and treatment. It is not mentioned in the recent valuable publication of Dr. Warren, on tumours, nor in the two most modern French Dictionaries.

George Brock, 28 years of age, a person of middle stature, and rather muscular frame, has usually enjoyed good health. He has had some pain in the left side and ankle since February: for the last seven weeks he has felt stiffness in the left knee, with a swelling in the ham, impeding the action of the joint, and causing a little lameness. He was received into the hospital July 15th, 1837. An indolent tumour is seated in the ham, where it causes a slight projection, a little nearer to the inner than the outer ham-string, being imbedded between these, like a popliteal aneurism, which it exactly resembles in situation and appearance. When the knee is extended, and the muscles of the thigh are put in action, the swelling is tense and firm, and projects obviously in the popliteal space; it appears equal in bulk to a middle-sized orange. When the knee is bent it becomes softer, and it cannot be felt at all in extreme flexion of the joint; hence it must contain fluid, although it has a firm and solid feel when the limb is extended. Even in the latter state it presents no symptoms belonging to aneurism, nor does it exhibit any communicated pulsation. The tumour is unattended with pain, and causes no other inconvenience than a little uneasiness about the knee, and slight lameness; these being so inconsiderable, that the patient, when I first saw him, did not intend to come into the hospital. I considered the case to be of the nature of a ganglion, and probably bearing the same relation to some bursa connected with the inner ham-string, that ganglions of the wrist and feet do to the fibrous sheaths in these situations. A dozen leeches were applied: the surface was subsequently blistered, and then dressed with the savine cerate. No change was observed from these means. At the end of a fortnight the synovial membrane of the knee joint became inflamed, and there was effusion into the joint. Cupping, leeching, and blistering were necessary to remove this attack; the joint and the swelling were subsequently covered with the emplastrum ammoniac. c. hydrarg. As yet, there is no material diminution of the swelling.

This patient continued in the hospital for several weeks. He became affected with severe pain in the limbs shooting down the left lower extremity, the muscles of which were sometimes spasmodically contracted, so that he could hardly move the thigh or knee, and he was consequently confined to bed. The synovial membrane of the knee inflamed again. He was cupped three times in the loins and once on the knee, and was blistered more than once in both situations; on different occasions he used the warm bath, and took the acetous extract of colchicum in doses of three grains, at bed time. He left the hospital in the beginning of November, completely free from the pain in the loins and the

spasmodic affection of the thigh. The knee had recovered; the popliteal swelling was less, but not completely removed. He has been at the hospital since, expressing to the sister of the ward that he felt quite well and free from lameness; but the ham was not examined.

In another patient, whom I have seen lately, there was a swelling in the ham exactly similar to the preceding in size, position, and other circumstances. He is between 50 and 60 years of age, and employed as a private watchman; so that he is much on his legs, and exposed to the atmosphere in all weathers. He has suffered occasionally from rheumatism. The swelling in this case caused considerable lameness. I prescribed medicine, and directed that the swelling should be covered with the emplastr. ammon. c. hydrarg. In ten days the swelling had disappeared, although some weakness and stiffness of the joint remained.

I had an opportunity, a few weeks ago, of ascertaining more precisely the nature of these affections. I was consulted by a patient, nearly 50 years of age, on account of a softish indolent swelling in the ham, which had existed for some time, and caused little inconvenience. It was immediately under the skin, and moveable in all directions. I did not observe that its state was altered by any motions of the knee. In its indolence, its softish doughy feel, its subcutaneous situation, and complete mobility, it presented the characters of an adipose tumour, and I considered it to be of that nature. There was no lameness, but the patient stated that she had sometimes experienced a little weakness in both knees. I represented that the swelling was probably a mass of fat; that if it did not increase, and caused no inconvenience, there was no necessity for doing any thing; under other circumstances it might be properly and safely removed. The patient said that it was increasing, that it had caused some pains in the knee, and that she wished to have it removed, if the operation could be performed safely. On dividing the integuments, I immediately perceived that the swelling was a cyst, containing a fluid: it was loosely connected to the surrounding parts, and thus easily detached. The mass of the swelling was immediately under the skin, but it had a deeper continuation in the direction of the inner ham-string. Having traced this as far as appeared to me advisable, I cut it off, when the contents of the cyst flowed out in the shape of a viscid fluid, so thick that it could not be taken up with a sponge, of a light dull yellow tint, and nearly transparent. It was thicker than white of egg, and very similar to what is contained in ranulæ. The cyst was fibrous, thin, and semi-transparent; it was slightly sacculated internally, so as to give an irregular edge to the swelling, like the lobulated margin of a fatty tumour. As far as could be ascertained by the finger, the cyst terminated by a blind extremity, near where it had been cut through. The quantity of the fluid was about two or three table-spoonfuls. No blood was lost in the operation, which was quickly finished, and gave much less pain than the patient had expected. The edges of the wound were brought together by adhesive plasters, and rest in bed was enjoined. When I saw the patient the next day, I was shocked at seeing her with a flushed and oppressed countenance, and a drowsy look, like that of a person in typhus. I found that in an hour or two after the operation, the wound and the knee had become painful; that bleeding had begun soon after, and proceeded to such an extent, that a neighbouring practitioner had been sent for, who had opened the wound and applied cold, under which the hæmorrhage had ceased. He supposed that about twenty ounces of blood had been lost. The severity of the pain had induced him to administer an opiate, from which some relief was obtained. The pulse was rapid and rather feeble; the tongue dry, with a brown middle streak; and there was that kind of restlessness, without apparent cause, which is always a most unfavourable symptom. The wound and the knee were easy; but there seemed to me a little general tumefaction of the latter. The bowels had not been relieved since the day before the operation. I ordered aperient medicine, with light cordials and nourishment, and bread poultice to the part. The bowels were freely acted on by the purgatives, but no material change was produced in the symptoms. The pulse increased in rapidity and feebleness, delirium and

incoherent talking came on, and the patient sunk in about sixty hours from the operation, having made no complaint of the wound or knee after the first night, but, on the contrary, expressed that they were quite easy. I cannot ascribe the unfortunate event of this case to any thing connected with the peculiar affection. It rather seems to exemplify the fatality sometimes attending even slight operations, when performed on individuals of unsound and irritable constitutions. This patient had suffered repeatedly from serious illness, and was obliged to live most carefully and quietly. She had lost a brother from constitutional irritation, in some respects analogous to that which she herself experienced, excited by a slight accidental injury. One reason why she wished for the operation, which I did not recommend, was, that she felt herself at the time in remarkably good health.

About three weeks ago, a gentleman thirty years of age consulted me for a swelling on the inner side of the right knee, a little below the joint. It was nearly as large as a walnut, and had all the characters of a ganglion. I burst the cyst by means of a sharp blow with a stick, and its contents were diffused in the surrounding cellular substance. The cyst did not fill again. This must have been a ganglion connected with the bursal apparatus of the flexor tendons, where they play on the tibia.

[Since the occurrence of the foregoing cases, Mr. Lawrence had a man between thirty and forty, following the occupation of a smith, under his care at the hospital as an out-patient. He had a swelling in the ham, precisely similar to that of George Brock, causing a little stiffness and lameness, but no other inconvenience. Mr. Lawrence attempted to burst the cyst by striking it, but could not accomplish the object, as the tumour, being surrounded by soft parts, yields, and thus eludes the effects of the blow. He ordered the emplastr. ammon. c. dydrarg., and has not seen the patient lately.]

One of these tumours was met with in a male subject brought into the anatomical rooms for dissection since the beginning of the season. It was a thin, slightly sacculated, fibrous cyst, containing the viscid fluid already described. The swelling lay in the ham, near the inner ham-string, between the muscles of which it was continued. It was firm when the knee was extended, and became looser on bending the joint. It terminated in a blind extremity between the muscles of the ham-string, and could not be verified as an enlargement of any normal bursa.]

The nature of these swellings in the ham is shown clearly by the facts now related, which prove also that the affection is not uncommon. I have lately seen another instance of it in a gentleman of gouty habit, between 50 and 60, who had inflammation of the synovial membrane of the knee from an accident. In examining the joint as he was recovering from this attack, I found a swelling in the ham, but I did not mention it to the patient, as he was not aware of its existence, and as the stiffness remaining from the inflammation confined him to moderate use of the part. The free use of the knee was soon restored, and I have heard no complaint of swelling or stiffness since.

In the composition and contents of the cyst, these tumours correspond to the ganglions so frequent on the back of the hand and wrist, and occasionally observed on the back of the foot; they are quite different from the swellings formed over the patella and olecranon, in consequence of external injury or irritation; these being inflammations of normal bursæ, and containing either a thin fluid of almost watery consistence, or a purulent fluid, according to the degree of the local disturbance. If they should cause inconvenience by their size, and if they cannot be lessened or removed by stimulating plasters, liniments, friction, or blisters, I think there could be no danger in letting out their contents by puncture, and closing the opening—a proceeding which is employed with safety in ganglions. The fatal case is well calculated to inculcate a lesson of caution in operating on such affections, although its unfortunate termination was probably owing to peculiarity of constitution rather than of disease. I must, however, observe to you, that serious consequences have ensued in other instances from operations performed on ganglions, and as these affections are in themselves

quite free from danger, and produce at most an inconvenience, with perhaps a slight deformity, no dangerous method of treatment should be adopted. Free incision and exposure of the cyst was resorted to in two cases of ganglion: one was connected with the tendons of the peronei, near the external malleolus; the other with the extensor tendon of the fingers on the back of the hand. Inflammation was excited in both cases; several abscesses formed; and both the patients, who were military men, were obliged to leave the service.* A seton carried through one of the ganglia sometimes formed about the flexor tendons of the fingers, where they pass under the annular ligament of the wrist, caused violent inflammation, suppuration, and death on the fifteenth day.† Dr. Warren mentions that he punctured one of these tumours, and discharged the synovial contents: the opening healed, and the patient was relieved. He repeated the proceeding in another case, and let out synovial fluid with several cartilaginous bodies. Fearing that there might still be some of the latter in the ganglion, he introduced a bit of dressing to keep open the wound. Inflammation and suppuration followed, and the patient was near losing the limb.‡—*London Med. Gaz.* April, 1838.

45. *Case of Varicose Veins successfully treated.* By A. MELVIN, Surgeon to the Forces.—Private James Gleeson, aged thirty years, 14th Regiment, a very delicate looking soldier, was admitted into the hospital of his regiment 19th May, 1838, for indolent ulcer of the right leg. Has been subject to ulceration of lower extremities for ten years; legs covered with dark coloured cicatrices.

Great enlargement of venous branches of both lower limbs, much increased on assuming the erect posture. Saphena trunks as large as his thumb, and somewhat tortuous; in right leg there are two venous sinuses nearly as large as walnuts. In consequence of these affections this man was brought forward to be discharged the service, at the last half-yearly inspection, as an inefficient soldier, and the ulcers showing no disposition to heal.

On the 26th May I inserted four common curved surgical needles under the enlarged veins of the right leg; a ligature was then passed firmly over the needles in the form of the twisted suture, to compress the veins. The needles were then turned down, so as to bring the sharp edge in contact with the vein, a bit of cork fixed on the points of the needles, and the whole retained by adhesive plaster.

June 3d.—Ulcers granulating rapidly. Two of the needles have ulcerated through, and the ligatures on the remaining two have become so loose as to be easily removed. Fresh ligatures were applied.

4th.—The operation was this day performed on two veins of the left leg, precisely in the same manner as formerly, and a large needle was passed under a venous sinus on the right leg, which had not been obliterated by the former operation.

7th.—Some puriform discharge from around the needles.

12th.—Ligatures on all the needles tightened. The patient expresses himself grateful for the relief he has obtained, and says the pain was nothing.

By the 21st the whole of the needles had ulcerated through; the ulcerated parts were dressed a few times with a poultice, there being some inflammation. On the 27th the man was discharged to his duty cured."—*Ibid.*, July, 1838.

46. *Abscess in the Pharynx.*—A farmer, of lymphatic temperament, and who had had several abscesses, experienced for a long time difficulty in swallowing. On examining his throat, Dr. Mequin observed a tumour at the posterior part of the pharynx, on the spine, and projecting towards the fauces; fluctuation could be detected in it. When this patient was seen by Dr. GUINZ, the relator of the

* Dict. de Méd. et de Chir. Pratiques, t. viii. p. 628.

† Dict. de Médecine, en 21 tomes, t. xii. p. 536.

‡ Surgical Observations on Tumours, p. 507.

case, the tumour had become as large as an apple, and in addition to difficult deglutition, there was great difficulty of respiration; the tongue projected from the mouth, and all the symptoms of threatening asphyxia were present. The abscess was so large that it raised the muscles of the lateral part of the neck, and particularly the sterno-mastoid. Fluctuation was most manifest at the anterior edge of the muscle just named, but Dr. G. thought it most prudent to make his incision four or five lines behind its posterior edge. The abscess was readily opened, and its contents discharged. The patient soon afterwards recovered. The cervical vertebræ were not affected.—*Jour. des Connaiss. Medico-Chirurg.*, July, 1837.

47. *Radical cure of Hernia.*—Dr. CRESSON reports in the *Journal des Connaissances Med.-Chirurg.* for April, 1838, three cases of hernia radically cured by the use of trusses. Two of these cases were scrotal and one inguinal. One of the former was extremely large, of very old date, and in a man sixty years of age. The other two were recent, but in men of forty and fifty years of age. The occupations of all, in addition to other circumstances, was unfavourable to a cure. He alludes also to cures effected by him by means of the truss in children, but gives no particulars.

The pad preferred by Dr. Cresson, is formed of a bag of gum-elastic, filled with air, he has also used with success, in oblique and recent hernia, the pad of solid gum-elastic, of an oval form, made so as to compress not only the neck of the sac, but the inguinal canal, through its whole extent, according to the plan of M. Malgaigne.

48. *Ulcerated Bubo cured by ferruginous preparations.*—A form of ulcerated bubo occurred some time since in the *Hôpital des Vénériens*, which seemed as if complicated with hospital gangrene. The bases of these ulcers were tumefied, and covered with a grayish sanies; their edges were everted and bleeding, and far from cicatrising, they seemed disposed to extend to the surrounding tissues.

This particular condition occurred in men who, for the most part, had been long in hospital, and were emaciated, feeble, and exhibited some traces of scurvy. In the treatment of these patients, M. CULLERIER was very successful with the carbonate of iron; mercury most generally having aggravated the disease. Under the use of this remedy alone, the general condition of the patients was sensibly improved, and the ulcers promptly cicatrised. M. C., in some cases, gave the hydriodate of iron in doses of from one-fourth of a grain to a grain, but he found it less efficacious than the carbonate of iron.—*Journ. de Med. et de Chirurg. Prat.*, January, 1837.

49. *Impropriety of operating for Fistula of the Anus in phthisical subjects.*—Last year a tuberculous patient, affected with fistula of the anus was admitted into M. Lisfranc's wards. Two years previously, this patient had been operated on for fistula by a surgeon of Paris, but this disease returned. M. LISFRANC refused to repeat the operation, saying that the patient was most fortunate in his complaint's returning, for his death from phthisis would in all probability have succeeded his cure. This surgeon added that he had often seen natural emunctories prolong the life of phthisical patients for a greater length of time than those established by art.—*Journ. des Connaiss. Med. Chirurg.*, August, 1837.

50. *Fracture of the Atlas and of the odontoid process; luxation of the first from the second vertebra.*—A curious example of this is recorded in one of the numbers of *Froriep's Notizen* for 1837. A man, thirty-two years of age, fell from the top of a wagon of hay on his occiput. He was stunned by the fall, but on his recovery, walked half a mile to consult a surgeon. He was bled and purged, and in three days returned to work, complaining only of a little stiffness of his neck, and a small tumour over the second cervical vertebra, which was scarcely at all sore on pressure.

After some months, pain and deglutition came on; his voice became altered, and a tumour appeared at the posterior part of the pharynx, over the second vertebra. Leeches were applied, and an issue made in the neck, but without benefit; and about a year after his fall the man died of pleurisy. On *dissection*, the atlas was found fractured into two fragments and separated. The anterior arch was thrust forward and downwards, and had contracted osseous adhesions with the body of the second vertebra. The processus dentatus was also fractured.

But few cases of fracture of the atlas are on record; and almost all of them, as well as of fracture of the dentatus, were instantly fatal. Cline, however, reports the case of a child who had a fall on its head, and who did not die until twelve months afterwards, when the atlas was found fractured transversely. (*Medico-Chirurg. Trans.* xiii.) M. Dariste exhibited to the Anatomical Society of Paris, at their meeting of the 18th April, 1838, a specimen of an incomplete luxation of the occipito-atloid articulation, with distension of the transverse ligament. The patient, from whom this was taken, lived more than a year after the accident, when he died from a tubercle in the brain.—*Archives Gén.*, May, 1838.

51. *New Method of Reducing Dislocations of the Os Humeri.*—An article (copied from the *Bulletin Générale de Thérapeutique* of April last,) is going the rounds of the journals, in which, what is considered a new method of reducing dislocations, devised by M. MALGAIGNE of Paris, is described, and a case is related of a dislocation of the humerus into the axilla, which had existed 23 days, and which, after the usual methods had failed, was reduced, by M. JOBERT, by the method of M. MALGAIGNE. This method is as follows:—An assistant stands on a table close to which the patient is seated—places his foot on the shoulder of the latter to make counter extension, and pulls with both hands the dislocated arm, raised to a nearly vertical direction.

This new method, it will be at once perceived, is essentially the same as that described by our correspondent, Dr. SAMUEL ANNAN of Baltimore, (see this Journal for Feb. 1837, p. 376,) and has no claims to novelty.

52. *Luxation of the scapular Extremity of the Clavicle, downwards.* By Dr. TOURNEL. This case is interesting, as being, apparently, with one exception, the first of the kind hitherto detailed; and as being one, also, the possibility of which has been questioned.

A soldier was thrown from his horse. The horse fell on its rider, and, in recovering itself, placed its foot on the front of his left shoulder, where was an ecchymosis of almost the exact shape of the horse's shoe. The pressure separated the scapula backwards. The clavicle remained attached to the sternum; but, its superior and inferior and coraco-clavicular ligaments having been torn, its external extremity slipped from its articular surface beneath the acromion. The accident was regarded at first as a dislocation of the humerus, but the true nature of it was ascertained by an examination in the following manner: The summit of the shoulder was grasped with one hand, resting on the acromion, whilst, with the other hand, it was ascertained, by various motions, that the axis of the humerus was in its ordinary direction. There was no bony projection in the axilla. The left arm was somewhat longer than the right; the elbow and all the rest of the limb were in contact with the lateral part of the trunk. Voluntary movements, and especially upwards, were impracticable: communicated movements were easy, and unattended with pain. The shoulder had lost its rounded form, and there was a depression outwards, beneath the acromion. The shoulder presented, in addition, two prejections; one internal and superior, formed by the acromion; the other external and inferior, formed by the external extremity of the clavicle. There was no numbness or pain of the fingers. The summit of the left shoulder was much nearer the sternum than that of the right; and, when the finger was passed along the spine of the scapula from behind forwards, as far as its acromial extremity, it was not stopped by the clavicle. This had been perfectly recognised; and it disappeared, together with the sub-acromial depression, when, the knee having been placed between the two should-

ers, they were both drawn backwards: but, when this traction was discontinued, the projection, formed by the external extremity of the clavicle, and the depression, were reproduced. The association of all these symptoms leaves no room to doubt that this accident was a dislocation of the scapular extremity of the clavicle, downwards. The reduction was easily effected by placing the knee against the vertebral column, and drawing the shoulders backwards. A cushion was then placed, and retained by bandages in the axilla. The arm pressing upon the cushion was kept applied to the trunk upwards and backwards, by Desault's bandage for fracture of the clavicle. Spirituous lotions were applied to the shoulder. The fore-arm was placed in a sling, and the whole kept in position by a bandage passing round the body. The impatience of the soldier required the removal of this apparatus. Instead of it was substituted that of M. Flamant, which has the advantage of leaving the injured part uncovered. This consists of a grooved bag,* to the angles of which are sewn two rollers, and of a pad, which is placed, as above, in the axilla. The arm being placed in the bag so that the elbow corresponded to its middle angle, the roller, sewn to its anterior angle, was passed over the middle and dorsal part of the fore-arm, and continued in front of the chest. The other was continued over the back part of the arm, and crossed the former over a thick compress placed upon the uninjured shoulder. The rollers were continued in these directions for two or three turns, crossing one another over the uninjured shoulder, and beneath the elbow of the opposite side. The remainder of the rollers was then passed round the trunk, in order to fix the arm. At the elbow, the bandage was kept in its situation by four tapes, two of which were sewn to the inner side, and two to the outer side of the sac in which the elbow rested! The whole apparatus was covered by a bandage of the trunk, and the scapulary of this bandage was employed to keep resolute compresses applied to the injured shoulder. Notwithstanding his impatience, the soldier perfectly recovered, after thirty-two days' treatment. The first use which he made of his arm was to severely castigate his horse. He remains in his regiment, and experiences neither pain in the shoulder nor difficulty in the movements of the arm.

In the "*Ephémérides Nat. Cur.*," is an account of a similar displacement. In both cases the cause was violence from above, and directly upon the scapular extremity of the clavicle.—*B. & F. Med. Rev.* July, 1838, from *Archives Générales de Médecine*, Dec. 1837.

53. *Reduction of an old Luxation of the Elbow in a child.*—M. MALGAIGNE with the assistance of M. LISFRANC, has succeeded in reducing a luxation of the elbow, backwards, which had existed three months and twenty-one days, in a child ten years of age. "The nature and age of the luxation in so young a child were probably the causes of this success," says M. Malgaigne; "a fact without a parallel in the history of surgery, and one which should reassure the surgeon against the fear of breaking the epiphyses, when he makes use of an appropriate apparatus." These two surgeons employed direct traction with pulleys, and at one time carried it to a force of 300 pounds. The reduction was afterwards accomplished by a novel procedure, which consisted in drawing the arm and fore-arm backwards, whilst the olecranon was pushed with the knee gently forwards and downwards.—*Revue Méd.* Dec. 1837.

54. *Glandular Congestions and White Swellings, caused by large doses of Muriate of Barytes.*—M. LISFRANC is said to have cured with extraordinary rapidity a number of patients of different ages, affected with lymphatic and glandular swellings, by the use of the muriate of barytes. A child affected with a large glandular tumour, was cured in less than a month, by four grains of the salt a day dissolved in four ounces of distilled water, and by frictions to the part with ung. hydriod. potass.

White swellings of the knee, elbow and wrist, with and without ankylosis

* Sac en forme de gouttiere.

in adults have also been cured by the same means. The dose of the muriate, for these patients has been as large as twenty-eight grains daily.—*Continental and British Med. Rev.* Sept. 1837.

55. *Polypus in the Nostrils.*—The extirpation of polypus in the nostrils is one of the most simple operations, yet its success often depends on the acquaintance with some minute practices, a description of which is not found in books, and which are only learned from experience. When polypi extend into the posterior nares, M. LISFRANC recommends that the forceps be long, have small points, the insides of which are rough, to prevent their slipping from the peduncle. A recurrence of polypi is a very frequent occurrence, not because those which have been extracted have not been completely taken away, but because new ones form. Near large polypi there are always on the mucous membrane small ones, not bigger than a pin's head which grow rapidly. M. Lisfranc states that the only remedy to prevent the growth of these and a recurrence of the disease is the following solution, conveyed to the posterior nares by means of a camel's hair pencil: Take of strong decoction of red rose leaves ℥iv; sulphate of zinc ℥ij.—*Continental and British Med. Rev.* Dec. 1837.

56. *Wound of the ascending aorta cured spontaneously.*—The following remarkable case, which we find in the *Archives Générales* for May last, copied from the *Zeitsch fur die Arztn. von Neuke*, No. 2. for 1837, affords a striking example of the extraordinary curative powers of nature.

J. H. thirty-two years of age, a large and robust Bavarian soldier, received in 1812 a stab with a knife in the left side of the chest, between the fifth and sixth ribs. The instrument penetrated the lung, and profuse hæmorrhage followed. He fell to the ground without consciousness and remained for more than an hour exposed to extreme cold. In this state he was found by Dr. NEIL of Bamberg, who, although the man was apparently at the point of death, brought the united lips of the wound together with adhesive strips, ordered cold applications to the chest and had him carefully carried to the hospital. After the lapse of some hours, during which the hæmorrhage continued abundant, the patient came to himself and opened his eyes, but to his great surprise he was wholly unable to see. He had incurable amaurosis. After a few weeks the wound healed. The man then left the hospital, and to console himself for his infirmity gave himself up to drink and a year afterwards he died of pneumonitis.

On examining his body it was found that the wound completely traversed the lung. This organ was united to the costal pleura and cicatrices existed in its opposite sides. Opposite to one of the cicatrices a solution of continuity of a quarter of a line in extent was discovered in the ascending aorta, which was closed by a thick mass of lymph. After removing carefully the artery, and dividing it lengthwise, a cicatrix was very apparent on its internal surface opposite to the external lesion, proving conclusively that the wounding instrument had completely divided all the coats of the vessel.

57. *Treatment of Urethral Blennorrhagia.*—M. RICORD of the Venereal Hospital, Paris, having proved by numerous facts, the advantage in the cure of inflammation of the mucous membrane, of preventing the contact of the diseased parts—as for instance, in cases of balanitis, a dry rag being placed between the glands and the prepuce, permits a cure in three or four days, which by means of antiphlogistics could not have been cured in a fortnight: in cases of urethral blennorrhagia, it is always advisable to introduce a band of fine linen, which would prevent the contact of the coats of the canal. These indications were given in the clinical lessons in 1832, both in the hospital and at the school of medicine; and they were soon after to be found in different works. Several means have been tried by different surgeons since that time, to place small folds of rag in the urethra, without fatiguing or irritating the canal, already inflamed, and the most simple instrument is always the best.

M. Ricord makes use of gum elastic catheters of different dimensions, ac-

according to the size of the fold of linen; a steel rod twice the length of the catheter serves to place the linen in the instrument; it is thus introduced into the urethra; the catheter is drawn away very gently; the steel rod is then taken out and the rag remains. Among other cases given by M. Ricord, in support of this medication, is that of a patient, with whom divers therapeutic agents had failed, although directed by very clever practitioners; the cure was due to the application of a small fold of linen in the manner described; it was renewed ten times.—*Continental and British Med. Rev.* Nov. 1837.

58. *Radical cure of Sprains, by the use of M. Larrey's Immoveable Apparatus.* There are very few practitioners who have not had an opportunity of remarking the difficulty of obtaining the radical cure of sprains; it is this persistence in the disease which maintains in the articulation, particularly if it be ginglymoid—a propensity to relapse, which occurs so suddenly, that the patients themselves are unable to account for it.

When we carefully seek to trace the causes of a number of cases of white swelling, we are not surprised to learn that most of them originate in sprains either badly treated or neglected.

If the question of sprains be discussed in Paris, it is universally agreed that it is a serious affection, requiring enlightened care. Yet sprains are very often treated by quacks, who undertake the cure; and we can scarcely credit that mysterious words and signs are used to accomplish this purpose. Other impostors pretend to set the *displaced nerve*, and the practice of the first surgeons in Paris are thus put at defiance.

The immoveable apparatus of M. Larrey is successfully used for the radical treatment of sprains, and the improvements made to it by MM. Velpeau and Seutin, have rendered it still more valuable.

When the inflammation and swelling of the tissues have been reduced by local bleeding, cupping, scarifications; as soon as the tissues begin to recover their normal state, the immoveable apparatus may be put on; and two days after, the patient may be removed from his bed, not to walk, but to have his leg placed on a chair, and allow the bed to be made, which greatly conduces to comfort.

When the skin is very fine, or that the marks caused by cupping or leech bites, are not quite cicatrized, they must be covered with small bits of lint, and a bandage put on; the immoveable apparatus is then fixed, taking care to bind up the toes, and not to bind tight the malleola, as the pressure should principally be on the articulation. The same precautions should be taken for the hand, elbow, and knee.

By means of starch a resisting mass is obtained, and M. Velpeau has thus enabled fractured patients to walk in the course of five or six days.

There are many facts in favour of this method, and not one failure. The following case seems worthy of attention:

A diplomatic courier sprained his foot in getting out of a post-chaise; the pain was so acute that he was obliged to be carried: he arrived in Paris in a state of great suffering; he had but four-and-twenty hours to return to London; and his despatches were of the highest importance, and he had orders to confide them to no one. My advice was asked; I found his foot swelled, the articulation ecchymosed, and the slightest movement caused great pain. I prescribed cupping on the ecchymosed parts, bleeding in the arm, and nineteen hours afterwards, I steeped bands of lint in a strong infusion of gum-kino, and I covered the whole with the immoveable apparatus of M. Larrey. I told the patient that if the pain was so acute as to lead him to suppose there was strangulation, he was to remove the whole apparatus. I placed in his carriage one of M. Mayor's suspensory apparatus for the foot. I accompanied my patient a distance of twelve leagues, and left him to continue his journey, convinced that he would arrive safely, which proved the case.

A fortnight afterwards he was again in Paris, still wearing the apparatus. I took it off and replaced it: he set off for Naples, and when he arrived was cured.

One of the royal postillions had kept his bed for three months, having sprained his foot, and not had any care taken of it. Several medical men already saw a white swelling, and recommended amputation; I recommended the operation being delayed. I advised leeches, mercurial frictions, and calomel, taken internally; both pain and swelling were removed, and the immoveable apparatus completed the cure.—*Ibid.*

59. *Case of enormous Ventral Aneurism, with the post mortem appearances.* By SIR DAVID J. DICKSON, M. D.—The subject of this case was a male, thirty-six years old, admitted into the hospital, Jamaica, said to be afflicted with a paraplegia, September 22d, 1836; discharged invalided December 16th. Admitted into the Naval Hospital, Plymouth, March 20th, 1837. Symptoms on admission: pain and uneasy feelings in the sacral region and loins; weakness; partial loss of power and numbness of lower extremities; imperfect command of the sphincter muscles; general health not materially impaired; a deep-seated, ill-defined hardness, or swelling, in the left side of the abdomen, at first referred to an affection of the spleen, but on further examination discovered to be a large, diffused pulsating tumour, either in contact with the abdominal aorta, or more probably an aneurism of that great trunk itself or of the common iliac. The patient frequently complained of sickness and anorexy, and had occasional vomiting, yet nausea was not a very prominent or distressing symptom. The tumour continued to enlarge and diffuse itself, and its aneurismal character became more evident; the general health of the patient, however, though subject to occasional relapses, appeared to improve. On the afternoon of September 6th, he imprudently went over to visit a friend on the opposite side of the house. Soon after ascending the stairs, he was seized with excruciating pain in the right iliac region, followed by excessive faintness, and a death-like paleness of countenance, and after suffering much pain, expired at 6 P. M.

Autopsy, seventeen hours after death.—Upon opening the abdomen, a small quantity of bloody serum escaped. The posterior reflection of the peritoneum had an ecchymosed appearance from subjacent semi-coagulated blood, which, effused in vast quantity, had raised the membrane from its attachments behind, and separated the laminæ of its different processes from each other. The blood was found to have escaped by an ulcerated opening of the size of a shilling, in the side of an immense tumour near the right kidney, which latter it had displaced forward and laterally, and which proved to be an enormous aneurism of the descending aorta. It commenced from the posterior part of the artery, two inches above the celiac axis, by a kind of neck, which extended to two inches and a half above its division into the iliac trunks—where, suddenly bulging out, it expanded over the whole of the abdomen. The tumour might be said to occupy, with the exception of the cæcal region from which it diverged to the left, the epigastric, both hypochondriac, the umbilical, and left iliac regions, and the pelvis. It accommodated itself to the concavity of the diaphragm, to which, as well as to the posterior inferior surface of the liver, it intimately adhered; lying behind the hepatic vessels and ducts, the pancreas, duodenum, &c. It was attached to the false ribs and spine; descending between the latter, the vena cava and aorta, it continued downwards behind the ureters and iliac vessels, but was separated from them by the iliac fascia, which, greatly condensed, formed one of its anterior coverings, and beneath which it insinuated itself. The tumour thence protruded in a conical form under Poupart's ligament, and appeared like an aneurism of the left iliac artery, which vessel lay in front, while the ureter crossed it obliquely; the psoas lying internally. The iliac muscles and crural nerve externally, and the great sciatic nerve were closely attached to its posterior inferior part. The immense sac was nearly filled with coagulated blood, of the consistency of wet clay, and some concentric layers of nearly colourless fibrine adhered, though not vascularly, to its walls. The lining of the sac was of a vivid red colour, mottled with osseous scales, deposited in the fibrous tunic, which in a great measure prevented its collapse. The external coat of the sac covered it entirely, except where it adhered to the spine, at which

part the tunics had entirely disappeared, and the last dorsal and first lumbar vertebræ were also partially absorbed. The middle coat was continued over the sac, or so gradually lost in the others, which, in some places, were nearly two inches in thickness, that its termination could not be detected. The internal tunic was continued for some way into the sac, where it became broken down, and undistinguishable from the adjoining clots. The deposition of ossified matter in the middle coat prevented the collapse of the artery from the pressure before and behind, and preserved a channel for the blood. Two small appendages, resembling knuckles of intestine, existed on the iliac portion of the tumour, and contained blood of the same appearance, but were distinct from it, being closed by the adhesion of their necks; their walls were thin, and of a purple grape colour. The abdominal and thoracic viscera, generally, were normal, with the exception of some pleural adhesions—the body was muscular and not much emaciated. So intimate was the adhesion of the tumour to the spine, that the lumbar and three dorsal vertebræ were removed with it. D. F. C.

OPHTHALMOLOGY.

60. *Plan of arresting the destruction of the Transparent cornea from acute Inflammation of the Conjunctiva.*—FREDERICK TYRRELL, Esq. has proposed a new plan for arresting sloughing of the cornea in purulent inflammation of the conjunctiva, founded upon his peculiar views of the causes of that pathological condition. The cornea, he is of opinion, is almost altogether dependent for its supply of blood, upon the conjunctival membrane extended over it, and he conceives it to be demonstrated that, in the high degree of chemosis attending upon acute purulent inflammation of the conjunctiva its supply of blood must be cut off by the mechanical strangulation of its vessels; from which condition, sloughing of the whole or of a part of the cornea (according to the degree of strangulation) must necessarily result. The plan of treatment, therefore, recommended by the author, consists in dividing the fold of conjunctival membrane, which, by its reflections, constitutes the chemosis, in order, by relieving the distension of its vessels, to diminish the degree of chemosis. The novelty of the plan consists not merely in the division of the conjunctiva, which has been long practised by others without the least benefit, but by dividing it in a *radiated* manner, from the centre of the cornea towards the sclerotic margin in the intervals between the insertions of the recti muscles, whereby the large trunks of the vessels supplying the conjunctiva are avoided. The method hitherto adopted by many surgeons of dividing in a circular direction, parallel to the margin of the cornea, not only produced no advantage but was even prejudicial, by cutting off more perfectly than before the vascular supply from the cornea.

Mr. Tyrrell asserts that by the practice he recommends he has succeeded in immediately arresting sloughing of the cornea, and urges the adoption of the plan by the profession, as safe and easy in its performance—more efficacious than any other hitherto proposed; and that it presents the necessity of active depletion, or the adoption of any severe, general or local measures likely to injure the general health, or to produce severe suffering.—*Medico-Chirug. Trans.* Vol. xxi.

61. *New Treatment for Pterygium.*—Dr. BRARD, of Jonzac, (Charente Inférieure,) has successfully treated a case of pterygium, in which this morbid growth extended a line and a half on the cornea, by passing over its surface from its apex to its base, a pencil of solid nitrate of silver. After this application the eye was immediately bathed in cold water and then a compress wet with this liquid placed upon the organ. In three days the slight inflammation caused by the cauterisation disappeared; the caustic was then again applied, and the cauterisation repeated every three or four days; the pterygium under this treatment gradually diminished; the cornea recovered its transparency without the slightest cicatrix, and in a month the affection was entirely removed. *Journal de Medecine et de Chirurgie Pratiques*, Oct. 1837.

MIDWIFERY.

62. *Irregularities of the Bowels a frequent cause of Uterine Affections.*—Many if not most of the troublesome affections of the uterus and of the rest of the generative organs are attributable *primarily* to derangement of the gastro-intestinal functions. This is especially apt to be the case in young females of a lax, lymphatic and scrofulous constitution: their appetite is usually irregular, and often bizarre, and their bowels are almost always sluggish and constipated. The system of education pursued in the present day unfortunately fosters, if it does not actually occasion, this state of things.

Little or no attention is paid in any boarding-school to the *physical education* of the girls: their occupations are almost all sedentary; their minds are much more exercised than their bodies; and even the very amusements, which are allowed them, are subjected to as strict a discipline as their regular studies. They become poor, feeble, pale creatures; their catamenial discharge is never quite healthy nor regular; and, when they become married, they either become the victims of frequent miscarriages, or else their offspring is puny and miserable.

When we consider that all the girls of a boarding-house are, without regard to difference of age or constitution, subjected to the same discipline, made to eat the same food, and altogether drilled in the same manner, how can we be surprised that so many of them, on leaving the establishment, return home with the seeds of much suffering and ill-health, deeply laid and ready to burst out when nature designs them for the more important functions of their sex.

Of all the evils of a boarding-school life, perhaps none is so essentially pernicious as the neglect—arising from a variety of causes—of a regular action of the bowels. Almost every girl in such establishments suffers more or less from constipation. As they approach the age of puberty, this disposition becomes more confirmed; the abdomen becomes fuller; the large intestines especially acquire greater size; the pelvis is now more capacious—all these physical changes induce a greater tendency to extreme inaction of the bowels, and to the consequent accumulation of large quantities of fecal matter in their cavities.

Now no portion of the intestines is so apt to suffer from this influence as the sigmoid flexure of the colon and the rectum. Independently of the injurious effect of alvine accumulations on the general health, the distension of the lower gut must necessarily cause a compression and a consequent congestion of the hæmorrhoidal vessels; the blood is thus obstructed in its free return. Hence the circulation not only in the rectum, but also in the uterus and its appendages, becomes gradually more or less deranged; thus laying the foundation for many of the most obscure and unmanageable affections of the uterine system—such as obstinate leucorrhœa, tendency to miscarriage, &c. &c. Many cases of nymphomania also are attributable to this same cause. The irritation extends from the rectum to the vagina and vulva; and hence, unless proper means are employed to remove the primary evil, all local palliatives to the seat of the distress are delusive and unsatisfactory.

If such be the state of health before marriage, many circumstances, mental as well as corporeal, occur afterwards to aggravate, at least very frequently, the morbid disposition.

What with fatigue of body, disquietude of mind, the excitement from sexual intercourse, &c.—all these causes tend to induce either a feverish irritability, or a languid congestion of the whole system.

As a matter of course, the organs which had been weak and ailing before, suffer most; and thus we may account for the numerous diseases of the uterine system which we meet with in the present day, more especially in large towns.

Mad. Boivin remarks:—"The state into which the whole organization has fallen in such cases as we have been alluding to, gives rise to irregular and dis-

eased secretions, and to various morbid growths and degenerations of tissue, especially in the mammæ, and in the uterus and its appendages."*

Having thus explained her views respecting the morbid tendencies of the uterine system, our authoress goes on to observe:—

"I do not agree with those who believe that pregnancy, miscarriages, and difficult parturition are the most frequent cause of the diseases of the uterus. I am rather inclined to adopt the reverse of the proposition, and to assert that *certain morbid states*—the etiology of which we have explained above—of *the uterus and its appendages, are the most frequent causes of premature and abortive labours.*"—*Med. Chirurg. Rev.* July, 1838. *Recherches sur l'Avortement par MADAME BOIVIN.*

63. *Amputation of the limbs in Utero*—A case is recorded in *Siebold's Journal*, Vol. xvi. No. 2, which throws some light on the etiology of spontaneous amputation of the limbs in uterus. A fœtus about three months old was expelled, with the umbilical chord wound round the right leg above the ankle and forming a knot. The development of the limb was thus completely prevented; and the leg seemed worn away down to the bone; the integuments were not altered.

64. *On Abortion arising from Morbid Changes in the Uterine Appendages.*—Morbid changes in the uterine appendages are, according to MADAME BOIVIN, one of the most frequent and least known causes of abortion. In a lady who had died of another complaint soon after abortion, the broad ligaments, the fallopian tubes, and the ovaries, were found agglutinated together and adherent to the posterior surface of the uterus. The adhesion was so close as to require recourse to the scalpel to separate it. In the conglomerated mass, numerous small tubercles, varying in size from a small millet seed to a pea, were discovered.

In such a condition of the parts miscarriage is inevitable, as the uterus and its appendages cannot expand to the increasing size of the ovum, their resistance becomes the cause of excitation, and a miscarriage is the consequence.

Madame B. adduces many cases to prove the existence of some morbid changes of the uterine appendages in cases of miscarriage. This change, whatever may be its character or appearance on dissection, seems to be always the result of inflammation. In scrofulous subjects the agglutination of the uterine appendages is often associated with the formation of purulent deposits between the uterus and rectum.

The diagnosis of this morbid change in the uterine appendages is difficult. The following symptoms are, however, indicative of its existence. Severe pain and suffering during the menstrual period; continual bearing down and sense of dragging during the menstrual flow, and also during the evacuation of bladder and rectum; acute dull pain in one or both groins, extending upwards to the loins and downwards to the limbs, and more or less of leucorrhœal discharge.

Mercurial inunction on the groins, thighs, &c. continued until slight ptyalism is produced will, Madame B. asserts, often succeed not only in restoring the health of the patient, but also in removing the tendency to subsequent miscarriages. She also advises the use of the hydriodate of potash. *Recherches Sur l'Avortement.*

65. *Singular Case of Abortion.*—DR. ERBKAM, second physician of the Obstetric Clinical Institute of Berlin, has described a very remarkable case of abortion in the fourth month, where the motions of the fœtus continued strong for some time after birth. Finding upon being expelled, that it moved, he tied the cord, and placed it in warm water. The movements, which consisted in drawing up the feet and arms, turning the head from one side to another, and

* We have had occasion, says Mad. B., to see fine young women, who exhibited all the characters of maidenhood, extremely subject to catamenial irregularities, and each labouring under a scirrhus affection of the mammæ. Three of these patients were operated upon by the Baron Dubois: their respective ages were 22, 25, and 38.

opening the mouth as if endeavouring to breathe, continued for half an hour. The action of the heart was visible for ten minutes after all other movements had ceased; as soon as fresh warm water was added, these motions again returned. The length of the foetus was six inches, its weight eight ounces; the head was sufficiently developed, and the cranial bones considerably advanced in the process of ossification; the eyes were closed. From a superficial inspection of the external genitals, it might have been taken for a female foetus, there being well marked labia, between which a large clitoris projected: on opening the abdomen, however, the testes were found in its cavity. The foetus was shown to Professor J. Müller, who expressed it as his conviction that the foetus was not more than four months advanced. *B. & F. Med. Rev. From Neue Zeitschrift für Geburtskunde. B. v. H. 2.*

66. *Remarkable Case of Embryotomy on account of Exostosis of the Pelvis.*—By Dr. KYLL, of Cologne. The patient was a robust peasant woman, æt. forty-five, mother of seven children; her former labours had presented nothing unusual, except that, in her last, which occurred in her forty-second year, medical assistance had been required to remove the after-birth, which the practitioner declared had formed an unusually firm adhesion to the uterus. She experienced no ill effects from its extraction, beyond suffering a good deal of pain at the time. On the sixth day after labour, she was seized with feverish symptoms and violent pain, at the spot where the placenta had been removed. The attack yielded to proper treatment, but she continued feverish at night, with perspirations, bowels frequently deranged, difficulty in passing water, with severe pain in the abdomen, especially when she tried to stand on the right leg. An abscess formed in the right groin, which was opened, and discharged a large quantity of pus. Her recovery was very slow; she became extremely emaciated, and did not leave her bed for seven months. On getting up for the first time, it was observed that she limped, and the right leg was evidently shorter than the left; but, with this exception, she completely recovered her health and strength, and again became pregnant three years after. On labour coming on, the midwife could reach no presenting part; but, after some hours, when the os uteri had dilated considerably, a foot presented, and shortly after the other descended also; and, after long and severe pains, they approached the os externum, but no extractive force could make them advance further. During the night, a coil of the cord prolapsed: it was without pulsation; but it was not until the following morning that the patient could be induced to permit a medical man to be sent for.

On his arrival, Dr. Kyll found, upon external examination, the uterus very high and inclined to the left side. On examination per vaginam, he found the child resting with the hips on the brim of the mother's pelvis, and completely wedged fast by a hard tumour, which sprung from the upper part of the sacro-iliac symphysis: it was about the size of a small hen's egg and immovable. Below this projection, the pelvis was sufficiently spacious. From these circumstances, it seemed evident that, during her last confinement, she had suffered from pelvic abscess, which had, in all probability, caused this exostosis. The child being evidently dead, the perforation was determined on.

Dr. K. first of all endeavoured to bring the pelvis of the child through the superior aperture, by pulling firmly at the feet; and succeeded at length in bringing it as far as the breast, beyond which it would not stir: he therefore opened the abdominal cavity with a bistoury, passed his hand through the diaphragm, and evacuated the contents of the thorax. The thorax now descended, but the two arms had become turned up on each side of the head. As there was not sufficient space to bring down the arms, Dr. Kyll removed them at the shoulder-joints with a pair of scissors: he then perforated the head at the occiput, in the hopes of bringing it down when the bones collapsed. As, however, he found that this was impossible, owing to the breadth of the the basis cranii, the only means of bringing it away would be by reducing the size of the head as much as possible, and then bringing it down with the occiput foremost, and the face upwards, through the left oblique diameter of the brim.

The head was very far from being sufficiently diminished by perforation; the narrow space required that its perpendicular diameter should be lessened, in order that the vertex should not be stopped by the anterior wall of the pelvis. In order to effect this, it became necessary to remove the body of the child, in order to gain sufficient space to get at the head. This was done close to the foramen magnum, by means of the scissors, leaving the head, which rolled about upon the brim of the pelvis with every movement of the mother. To diminish the size of the head, Dr. K. introduced his right hand to the left side of the pelvis, fixed the head by the left hand on the outside, and placed it with the face looking upwards, the sagittal suture turned to the left, and then pushed it as much as possible to the right side of the pelvis to gain sufficient space for his right hand; and, in order to fix the head in this position, he passed a sharp hook into the foramen magnum, and held it with the left hand. He now introduced a bistoury with his right hand, passed it up to the anterior fontanelle, which he cut through, and then divided the cranial integuments to the whole length of the sagittal suture. Having withdrawn the knife, he removed first the one and then the other parietal bone: this was the most difficult part of the whole operation, but it succeeded completely. He took this opportunity of removing the rest of the brain; and, having thus lessened the head, he placed it in the left oblique diameter of the pelvis, with the face upwards, and brought it through the pelvis without any exertion. The uterus contracted well, the placenta was easily expelled, and the patient recovered very quickly.

Immediately after the labour, he examined the tumour carefully, and felt convinced that it was an exostosis growing from the right sacro-iliac symphysis. *B. & F. Med. Rev.* July, 1838. *From Neue Zeitschrift für Geburtskunde.* B. v. H. 1.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

67. *Poisoning by the application of Emplastrum Plumbi to a large Ulcer.*—M. TAUFFLIEB has recorded in *La Gazette Médicale de Paris* (February, 1838) an example of this accident. A man 41 years of age had an ulcer of the left leg which had destroyed the integuments around the whole limb from the ankle to within three inches of the knee. The base of the ulcer was gray; it bled readily; and was covered with a sanious fluid. The patient experienced violent lancinating pains in it, and his general constitution was much impaired. The ulcer was covered with strips of diachylum plaster, (emplastrum plumbi,) which improved the condition of the ulcer, and cicatrization had commenced at the edges; and the patient's health was improving. At this period, two and a half months after this treatment had been employed, the patient was seized with violent colic, resembling in all respects that produced by poisoning with lead. An examination of the food and of the vessel in which it was cooked, not allowing of any suspicion of lead having been taken in his food, Dr. Taufflieb ascribed the attack to the use of the lead plaster. This was accordingly discontinued, and, under the alternate use of antispasmodics and laxatives, the symptoms of poisoning disappeared.

Five months afterwards Dr. Taufflieb was sent for in great haste and found his patient again labouring under a violent attack of Saturnine colic. On inquiry, Dr. Taufflieb learned that, for the preceding fifteen days, the patient had been again covering his ulcer with the emplastrum plumbi. This was removed, and, under the usual treatment the patient in a few days recovered.

Dr. Taufflieb has calculated that, in the space of eleven weeks, his patient had used forty-four square feet of the diachylum, and each foot of the plaster containing 114 grains of oxide of lead, it results that 10oz. 3½ drachms of this oxide had been in contact with the denuded surface.

68. *Practical and Medico-Legal Considerations on Multiplied Wounds in the Chest.*—By M. SANSON. A fencing master fought a duel with one of his profes-

sional brethren, and received three wounds in the chest; he was immediately conveyed to the *Hôpital de la Pitié*. On the right side of the thorax there were four marks of a sharp instrument, distant from one to the other, an inch and a half, to two and four inches. The most lateral and the most inferior was seated as high as the eighth rib; the second and third were found, one outside and under the right breast, the other inside and above it; the fourth immediately on the sternum; round the latter there was pain on pressure to the extent of an inch and a half from right to left, and presented emphysema. These four wounds bled very little, but what is most remarkable, they had not all the same shape; the first was quadrangular, the three others triangular. The instrument with which the wounds had been inflicted was a blunt foil, that is to say, with four angles, yet three of the wounds were triangular.

It will often be found that instruments cause wounds of different shape from their own. The degree of tension of the skin, the density of the tissues, their elasticity, the obliquity of the direction of the arm, and various other circumstances may modify the shape of the wounds. Some years since, in a celebrated cause, I was called on to state whether I thought the end of a sharp foil could have produced seven oval wounds found on the body of a young woman who had been assassinated. In the presence of the judges, and on the corpse of the victim with the same murderous instrument, wounds were made precisely similar to those inflicted during life.

It is, therefore, impossible to solve these two problems, a wound being made to decide on the shape of the instrument; and a wound being examined to determine whether it has been inflicted by the instrument found on the murderer.

The wounded man complained of great pain in the length of the wound on the sternum; he felt oppression and dyspnoea, was in a spasmodic state, and spit blood. These symptoms led to the belief that among the wounds some had reached the thoracic cavity, but, on examination, none of the wounds had penetrated.

The external and lower wound had scarcely reached the whole depth of the skin, the second and third wounds were made at one thrust; as to the last, it could not go through the sternum owing to the resistance of this bone, which presented itself obliquely at the time of the thrust. Care was, however, taken not to endeavour to acquire a more intimate conviction of the slightness of the wounds either by probing or in making injections, or in keeping the mouth and nostrils closed, and then making a strong expiration. These measures are *uncertain, useless, and dangerous*. The bandage being removed, it is possible that the thoracic cavity may have been opened, the probe does not reach beyond its coats; then again, in probing the wounds, a clot of blood may be removed and bring on hæmorrhage, more or less serious, irritate the pleura, and favour the introduction of air in the chest; and, if the wound be deep, the exploration will be of no use, as the results, whatever they may be, cannot be prevented.

On a close examination of each of these wounds, it does not appear that either of them were deep, and though the patient said he spit blood, yet since his admission into the hospital nothing of the kind had been seen. It is possible that, immediately after the wound, blood may have passed from the nose or throat. There is always oppression in individuals when the muscles of the chest are wounded by pointed instruments, which is owing to the pain caused by contraction of the muscles. It must also be remembered that the patient was nervous and irritable, and that, considering his profession, he was much humbled at being vanquished, which may account for the state of anxiety and agitation in which he was found after his wound.

We must now explain the emphysema surrounding the fourth wound, which symptom is considered pathognomonic of deep wounds. This explanation will be found in the mechanism of inspiration. It is said that dilatation of the chest by the inspiratory muscles tends to produce a vacuum in this cavity; this vacuum seems impossible, owing to the facility with which the air may overwhelm it in reaching the bronchi, and their ramification through the nostrils. In consequence of this tendency to vacuum and the laws of equilibrium of fluids, the

air rushes in, either by the nostrils, the nose, the mouth, or by artificial apertures, as for instance in laryngotomy. What happened in the latter case happened to our patient when he was wounded; the inspiration was increased by the shock following the sensation of the cold steel, and its shock on the sternum; the air thus strongly drawn on the coats of the chest, reached by the channel made by the foil; and, unable to proceed farther, fixed in the cellular tissue of the wound, thus producing the emphysema.

This patient, therefore, offered peculiarities worthy of remark, as his wounds made with the same foil were not of the same shape, and that, notwithstanding the serious symptoms, none of the wounds were deep.

The patient was bled, and cold bandages kept on the chest for six days; the wounds healed rapidly, and, on the fourteenth day, he left the hospital, and only felt oppression and pain above the fourth wound.—*Continental & Brit. Med. Rev.* Sept. 1837.

MEDICAL STATISTICS.

69. *Statistics of Club-foot.*—M. MARTIN has observed 61 cases of club-foot. Of these, 26 were double, and 35 single; of these last, in 18 the right foot was deformed, in 17 the left foot. Forty-five of the cases were in boys, and 16 in girls. *Gaz. Méd. de Paris*, June 9, 1838.

70. *Contribution to Statistics of Hernia among the Recruits for the British and Conscripts for the French Army.*—This is the title of an interesting paper by HENRY MARSHALL, Deputy Inspector-general of Army Hospitals, published in the *Edinburgh Medical and Surgical Journal*, for July last. "The instructions issued by the Army Medical Department, for the guidance of medical officers in the duty of examining recruits, directs," says Mr. Marshall, "that no recruit is to be approved who labours under 'hernia or a tendency to that disability.' The method usually employed in the examination of recruits to discover whether they are affected with hernia, is to direct each man under inspection to produce a violent action of the abdominal muscles by coughing. During this operation the surgeon places his finger over the ring of the external oblique muscles, first on one side and subsequently on the other. Should any doubt arise during this trial, that a man may be affected with rupture, he is directed to jump as high as he can, by which means a protrusion of the gut is occasioned in cases where this disability exists. Little dependence is usually placed upon the allegation of a recruit, in regard to his previous liability to a disability, as it is not an uncommon circumstance for a man to regret having enlisted, and, with the view of being rejected by a medical officer, to falsely allege that he is occasionally affected with rupture, or some other disqualifying infirmity."

Mr. Marshall gives a table showing the number of recruits for the army examined at the depot of the centre recruiting district, (Dublin,) from the 25th of September, 1804, to the 15th of April, 1834, together with the number of recruits rejected, causes of disqualification, and ratio found unfit by each class of disabilities. From this table it appears that the number of recruits examined during the period specified was 42,740, of which number 10,279 were rejected as unfit, or 240 per 1000; and that of those rejected, 920 were disqualified by hernia, being 215 per 1000 examined, or about one in 50 of those examined, or one in every 11 found unfit for service.

The following table, given by Mr. Marshall, shows the number of recruits examined at the centre recruiting district, (Dublin,) from the year 1804 to the year 1827 inclusive, together with the number rejected in consequence of hernia, and the ratio of rejections on that account per 1000 examined.

Years.	Recruits Examined.	Unfit in consequence of hernia.				Rejected. Ratio per 1000 Examined.	
1804	486	-	-	6	-	12.3	
1805	1501	-	-	35	-	23.3	
1806	1781	-	-	34	-	19.	
1807	1776	-	-	32	-	18.	
1808	1114	-	-	18	-	16.1	
1809	1423	-	-	16	-	11.1	
1810	1523	-	-	20	-	13.1	
1811	1793	-	-	46	-	25.6	
1812	3220	-	-	71	-	22.	
1813	2984	-	-	61	-	24.	
1814	1535	-	-	27	-	17.5	
1815	3413	-	-	74	-	21.6	
1816	2740	-	-	54	-	19.7	
1817	1426	-	-	38	-	26.6	
1818	1801	-	-	69	-	38.6	
1819	2783	-	-	40	-	14.3	
1820	1686	-	-	25	-	13.3	
1821	1986	-	-	37	-	18.5	
1822	3233	-	-	96	-	29.6	
1823	3100	-	-	88	-	28.3	
1824	1236	-	-	33	-	26.6	
1825	6229	Inguinal,	-	-	32	163	24.5
		Ventral,	-	-	44		
		Umbilical,	-	-	6		
		Laxity of one or both rings,	-	-	81		
1826	4018	Inguinal,	-	-	14	48	11.1
		Ventral,	-	-	3		
		Umbilical,	-	-	1		
		Laxity of one or both rings,	-	-	30		
1827	2583	Inguinal,	-	-	13	38	14.6
		Ventral,	-	-	3		
		Laxity of one or both rings,	-	-	22		
Total,	55,575	1169				21.04	

This table shows, that, during a period of about 24 years, 55,575 recruits were examined, and that 1169 were found unfit for military service in consequence of hernia, being 21.04 per 1000, or about one in 48. The relative annual ratio of rejections ranges from 11, in 1809, to 38 per 1000 in 1818.

“ It will be observed that 44 recruits were found unfit in the year 1825, on account of ventral hernia—a term which is usually applied to hernial tumours that appear at any part of the belly, excepting at the natural apertures, in the parietes of the abdomen. These tumours varied in size from that of a pea to about half a hazlenut, and never appeared except during a violent action of the abdominal muscles. In the same year six recruits were rejected in consequence of slight protrusion at the navel, under the denomination of umbilical hernia. This blemish is very rare among natives of the united kingdom; and, when it does occur, it is in general so slight as to be scarcely observable even during violent action of the abdominal muscles. A large proportion of the natives of Central Africa have, in a greater or less degree, rupture at the navel, which does not seem to disable them in the least for hard labour. It appears probable that the preternatural enlargement of the aperture at the umbilicus is congenital. Winterbottom informs us that African children are very subject to protrusion of the navel. Atkins imagines the protrusion to be the “effect of bad midwifery, or straining in their infancy to work.” But from what I have seen of the offspring

of negroes, I believe that neither good midwifery nor a life of ease will prevent a protrusion at the umbilicus in children of the aboriginal inhabitants of tropical Africa.

“Although I have, while officiating as staff-surgeon, rejected a number of recruits on account of small ventral hernia, and also in consequence of slight protrusion at the umbilicus, in compliance with the regulations, I do not recollect having seen an instance of either class of blemishes who was on that account unfit for his majesty’s service. The instructions issued on this subject directed that no recruit was to be approved who laboured under “hernia (of whatever kind,) or preternatural enlargement of the ring;” and, for many reasons, it would have been highly inexpedient for a staff-surgeon to be so far influenced by his own discretion or opinion as to commit a breach of the law. It will be recollected that the approval of a recruit by a staff-surgeon is not final, and consequently he must be in some measure guided in the execution of his duty, not by his own knowledge, experience, and discretion, but by his appreciation of the judgment and experience of the medical officer whose duty it is to decide finally upon the fitness or unfitness of a recruit for a regiment.”

The following table exhibits a summary of Mr. Marshall’s researches:

Recruits examined at	No. examined.	Total reject.	Ratio per 1000 reject.	No. rejected by hernia.	Millesimal ratio of rejections in consequence of hernia.
Dublin depot,	42,740	10,279	240	920	21.5=1 in 11 of No. reject.
Glasgow and Edinburgh, }	9,528	2,375	248	69	7.1 1 in 34 do.
German Legion, }	40,462	0	0	365	9
France, mean three yrs. }	126669	46,669	368	3,948	31.2 1 in 11.8 do.
Department of Seine, }	26,083	11,148	427	834	31.9 1 in 13.3 do.

“The above summary presents several very remarkable results, one of which is, that the ratio of rejections on account of hernia in Dublin is three times that of Glasgow and Edinburgh. Hernia appears to be 50 per cent. higher among conscripts in France than among recruits examined in Dublin. The uniformity of the ratio of rejections for hernia among conscripts in France for three years, (31.2), and in the department of the Seine for a period of eleven years, (31.9), is sufficiently remarkable. The much higher ratio of rejections for disabilities in general among the conscripts in France, than among the recruits examined for the periods specified in Dublin and Scotland, is also calculated to excite attention.”

ANIMAL CHEMISTRY.

71. *Urea in Dropsical Fluids*—R. MARCHAND has detected urea in the fluid contained in the peritoneal cavity in three cases of ascites. In the first he found 0.42, in the second 0.68, in the third 0.50 per cent.; and it appears probable that there was much more, because the quantity of albumen in the same fluid rendered it difficult to prevent the urea being entangled in the coagulated masses produced by the agents used in extracting it. In all the cases very little urine was secreted; and in two of them there was the disease of the kidney described by Dr. Bright. He mentions, also, that two cases are given by Nysten, (*Journal de Chimie Medicale*, 1837,) in which he found urea and uric acid, phos-

phoric acid, and several other constituents of the urine, in the fluid vomited by women labouring under ischuria renalis.—*Müller's Archiv*. 1837, part 4.

These cases, with those of Prevost and Dumas, (*Bibliothèque Univers.* xviii. 208,) who detected a considerable proportion of urea in the blood of dogs from whom the kidneys had been removed, by experiments which were confirmed by Vauquelin and Segalas, and by Mitscherlich, Tiedemann, and Gmelin, (Tiedemann's *Zeitschrift*, vol. i.) sufficiently prove that the excrementitious matter of the urine is not elaborated by the kidney, but merely separated in that organ from the blood, in which it had before existed ready formed.—*London Medical Gazette*, July, 1838.

72. *Analysis of Human Lymph*.—MARCHAND and COLBERG having met with one of those rare cases in which pure human lymph admits of being collected in sufficient quantity for chemical examination, have communicated the results of their analysis in the last number of *Müller's Archiv*. (No. 2, 1838.) The lymph was collected from a wound on the back of the foot, which obstinately refused to heal, a case exactly similar to that observed by Müller. (*Physiologie*, vol. i. p. 244.)

The specific gravity of this lymph was 1.307: after resting a short time in a glass vessel, a web-like fibrinous coagulation formed, which when filtered, washed with ether, and dried, weighed 0.52 per cent. of the whole quantity. The fluid part gave a precipitate with alcohol, and bichloride of mercury, in the form of delicate flocculi. It was strongly alkaline. When dried in a water-bath at 97.5 Centigr. the lymph entirely coagulated from the albumen which it contained; heated to 100°, and kept for some time at that temperature, it formed a firm, powdery, gray mass, amounting to 3.074 per cent. of its weight, which when washed with ether, lost about 1-20th of its weight by the removal of that quantity of fatty matter. When the mass thus freed from fat was treated with boiling water, about one per cent. of albumen and fibrin were left undissolved; and the fluid being evaporated, left one and a-half per cent. of saline constituents.

They give, as the general result of their analysis of several portions of lymph, of which they could collect about a grain and a half in 12 hours—

Water	-	-	-	-	-	-	-	-	96.926
Fibrin	-	-	-	-	-	-	-	-	0.520
Albumen	-	-	-	-	-	-	-	-	0.434
Osmazone (and loss)	-	-	-	-	-	-	-	-	0.312
Oily and Crystalline Fat	-	-	-	-	-	-	-	-	0.264
Muriate of Soda	-	-	-	}	-	-	-	-	1.544
——— Potass	-	-	-						
Alkaline Carbonates	-	-	-						
——— Lactates	-	-	-						
Sulphate of Lime	-	-	-	}	-	-	-	-	
Phosphate of Lime and Iron	-	-	-						

100.000

Ibid.

73. *Formation of Artificial Serum*.—M. DENIS is led, by some experiments which he has made lately, to regard the fibrin as identical with albumen, and as held in solution in the blood, during life, by the salts of the serum. He says, if some pure and well-washed fibrin be taken, and macerated for twenty-four or forty-eight hours, in water containing a neutral salt, as nitrate of potash, it dissolves. The new product resembles serum, or white of egg; it precipitates bi-chloride of mercury; alcohol reduces it into a curdy mass, and at 74° C it coagulates like pure white of egg; but if the solution be much diluted with water, the fibrin will gradually reappear, with its original properties. If a little caustic soda be added to the saline solution of fibrin, it becomes permanent; and when diluted with a great deal of water, will deposit only a slight

cloud. But if the salts employed are not in too great quantity, the alkalized solution will coagulate by heat; will precipitate with alcohol and bi-chloride of mercury, and the new fluid, which may be called *artificial serum*, will act like white of egg, or natural serum.—*Lond. Med. Gazette*, July, 1838. From *Archives Générales*, February, 1838.

MISCELLANEOUS.

74. *Proposed Experiments on Digestion*.—A resolution was passed by the medical section of the British association for the advancement of Science at their late meeting at Newcastle, to apply for a grant of 200*l.* from the funds of the association for the purpose of taking to Great Britain and retaining there for one year, Alexis, mentioned by Dr. Beaumont in his work on digestion, for the purpose of making physiological and chemical researches on the subject of digestion. The committee proposed for the investigation were Drs. Thompson, Prout and Graham and Professor Owen.

75. *Vaccination—Cow-Pox*.—What is most surprising in vaccination is, the loss of its source, almost immediately after it was discovered. Since that period, all the researches made in England, Germany, Italy, and France, have proved unavailable; the source has not been found. Some vaccinators, it is true, have at different times thought that they have found it in the cow, and pretend to have inoculated children successfully with it; but at the end of the second and third inoculation it has always spread, [?] and, until 1831, no means had been found to preserve it and transmit it to France.

The 30th of June, 1833, the true cow-pox was discovered 26 leagues from Berlin. Dr. Brenner, after 30 transmissions, sent it to Dr. Kraux, counsellor for the Government at Dusseldorf, who inoculated with it successfully, but symptoms as intense as those noticed by Jenner were not observed; yet they are produced by the cow-pox lately discovered in France.

M. Maceroni thought he had found it in Rome in 1832, and he affirms that in 1834, he, with M. Marcurri, found it in the same drove, which enabled him to transmit it by inoculation to children, and it then served to inoculate others. Unfortunately, the researches were not continued, and nothing more has been said on the subject.

But it is extraordinary that in 1836, within the space of a few days, the cow-pox was supposed to be found in three different situations not far distant from each other; at Passy, Amiens, and Rambouillet: the results of these various observations have induced the supposition, that the pustules succeeding inoculation with the new vaccine, arrive later at a state of maturity. The ancient vaccination began to show near the eighth day; the pustules resulting from the new inoculation are but little advanced at this period, and the areola that begins to appear is not well marked till the eleventh or twelfth day; the pustule is then fully developed.

Without changing its character, the aureola is large, of a vivid colour; the sub-jacent tissue is effused; if there be three punctures there is nearly always fever, the axillary glands swell, become painful, and sometimes suppurate. It is then the pustules acquire a diameter of four to five lines; they are circular and prominent; from the thirteenth to the fourteenth day it dries up, and from the fifteenth to the eighteenth the whole surface is dry, the scab remains flat and large, and only falls off from the twenty-fifth to the thirtieth day. It is evident that this eruption has characters peculiarly its own, and only resembles the Jennerian vaccination during the first seven days.—*British and Foreign Medical Review*, September, 1837.

AMERICAN INTELLIGENCE.

Description of the Ligamentum Dentis.—By PAUL B. GODDARD, M.D. A few months since, an advertisement appeared in the Philadelphia newspapers, stating that a dentist, by the name of Humphreys, possessed the power of extracting teeth with very little force or pain, and by a mode peculiar to himself. Conceiving that he possessed merely an improved form of forceps, or some similar instrument, it excited but little attention on my part. But when I was informed, by Mr. Rorer, that another dentist, and the original discoverer of the new method, (Dr. Caldwell,) had taken out a very difficult tooth for him, without pain, and that the new method consisted in cutting with a penknife something which held the tooth in its place, I resolved to scrutinize the matter closely. Accordingly, I sought Dr. Caldwell's acquaintance, but found him determined to keep his discovery a secret. I then procured a jaw, and making a very careful dissection, satisfied myself of the existence of a ligament. This consists of short, strong ligamentous fibres, existing on one side of the human tooth only, and unites the neck of the tooth to the edge of the alveolar process. The fibres arise from the edge of the alveolus between the teeth, and proceeding forwards in the case of the molars, and inwards in the case of the incisors, is inserted into the neck of the tooth, not quite the sixteenth of an inch from the edge of the enamel. Its size (and of course its strength) varies with the class of teeth to which it belongs. In the incisores, it is a narrow tape-like band—in the cuspidati and bicuspidati, it is wider, and in the molares, it is as wide as the neck of the tooth and very strong. A few of its fibres are blended with the gum in its neighbourhood, and thus we may account for its occasional laceration when a tooth is extracted. Its adhesion to the tooth is stronger than to the jaw, and, if not cut, it is commonly dragged out with the tooth. Its ligamentous character is very distinct, the fibres being white and shining, like tendon.

The accompanying figures exhibit the position of the ligament.

Fig. 1.



Fig. 1. Posterior view of the ligament of a molar tooth.

Fig. 2. Section of the lower maxilla with the teeth in situ: the black dots indicate the position of the ligament.

After making this dissection, I applied to Dr. Caldwell to remove a large molar, which had given me trouble for two or three years, and although my teeth had always yielded with difficulty, he removed the one in question with great ease and *very little pain*. I have seen several teeth which were extracted by him, and am convinced that he possesses a tact in severing the ligament and removing the tooth which will give him preeminent success.

Case of Chorea cured by the Actæa Racemosa. By HARVEY LINDSLY, M.D. of Washington City.

The following case tending to confirm the good effects of the Black Snakeroot, (*Actæa Racemosa*), in this distressing and obstinate affection, I have thought a brief report of it would not be uninteresting to the readers of the Journal. I intended to have forwarded it at an earlier day, but it escaped my memory until recently.

I was called, May 5th, 1836, to see Miss — of Tennessee, aged five years, who had been afflicted with chorea about two months. She was then suffering greatly from it—had lost the power of distinct articulation, being scarcely able to say “yes” and “no,” although before she was attacked, she spoke with uncommon fluency and distinctness. Her motions were all greatly influenced by her complaint—her step was tottering and uncertain, and she was in constant danger of falling—her power of deglutition was also much impeded, so that it was with much difficulty she could masticate her food, and it took her very much longer than formerly to get through with her meals—she could not feed herself at all, her hand being so unsteady that she could not convey liquid or even solid food to her mouth.

Previously to my seeing her, she had been for six weeks under the care of a physician in North Carolina, who had prescribed calomel and rhubarb every other day, purging her pretty freely; and on the alternate days she took the preparations of iron, and had a blister to the back of her neck. She had been constantly getting worse under this treatment, and arrived in Washington about the first of May, in the state above described.

As her parents felt great anxiety respecting her situation, fearing that as her disease had so far resisted treatment, it might prove wholly irremediable, the following gentlemen were requested to meet me in consultation: Dr. Lewis Condict of New Jersey, Dr. Linn of Missouri, and Drs. Hunt and Sewall of this city. I had, previously to meeting them, however, fixed upon a plan of treatment, which, after discussion, was adopted.

This consisted of the following items:—A full, nutritious diet, carefully avoiding stimulants and every thing indigestible; riding daily, and other exercise in the open air; frictions with flannel over the whole body; stimulating liniments to the spine and also to the lower extremities, (because these were habitually cold, while the face and head were flushed and heated;) no purgatives, except to obviate costiveness, when rhubarb and magnesia were ordered.* I relied, however, chiefly upon the *Actæa Racemosa*, my attention having been called particularly to it by several cases reported by Dr. Young, of Pennsylvania, in the American Journal for Feb. 1832, p. 310. Half a teaspoonful of the powdered root was directed three times

* The daily use of the warm bath was suggested; but after a few trials it was relinquished, as the little patient suffered much from debility after its employment, and it unequivocally rendered the flushing about the face greater and more distressing.

a day. This was the only medicine given for about two weeks, when she commenced taking also Carb. Ferri. gr. ij. to iv. three times a day. This plan was persevered in, with occasional short intermissions, as long as she was under my care, which was till towards the end of June, when she left the city for her residence in Tennessee.

Her improvement was marked and rapid, being perceptible in a few days after I first saw her. She continued to convalesce regularly and constantly, so that, by the time she left Washington, she was almost entirely recovered. She could talk nearly as well as ever—and but a very slight defect (and that only upon close observation) could be detected in her walking. She could *run* as fast and as securely as any child of her age. Her general health was now perfect. I directed a perseverance in the same plan of treatment during her journey homeward, and for some time afterwards.

December 6th, 1836. Her father has just returned to Washington, and informs me that his little daughter has continued perfectly well during the whole season, with a good appetite and *entire* freedom from her distressing complaint.

Washington City, Aug. 1838.

A second case of Enlargement of the Thymus gland, terminating fatally, in a child 29 hours old. By WM. C. ROBERTS, M.D. of New York.

In the number of this Journal for August, 1837, I recorded a case of congenital enlargement of the thymus gland, which proved fatal to a child of eight months, and was attended with some unusual symptoms. Another case of the same kind having fallen under my observation, I beg leave to communicate the particulars of it to the profession.

Mrs. W. was delivered, at 11, A. M. on the 17th July, of a healthy male infant, which cried strongly at birth. In the afternoon it took the breast, the meconium and urine were passed, and the child seemed to be doing well. At 3 P. M. (as I have been since informed) it became restless, and the father thinks looked livid about the face. After the administration of some catnip tea, it was put to sleep. On visiting the mother at 10½, A. M. on the following day, the child was shown to me. Its look was placid and bright—its skin not hot, but the manner of its respiration instantly attracted my attention. The breathing was inexpressibly rapid and panting, effected strongly both by the chest, diaphragm and abdominal muscles. The heart beat with the greatest force and frequency, and violent pulsation was felt in the chest and abdomen. There was no cough, and no subcrepitant rattle, and I neglected to feel for the elevation of the brain at the fontanelle. The pulse, from its frequency, could not be counted. I suspected at the time that it laboured under either pneumonia or an enlarged thymus gland, but as it seemed in no suffering, I postponed any treatment until I could visit it again shortly. This I was prevented from doing, and about 4 P. M. I was informed of its death. It had cried unceasingly from the time I left it, but had died tranquilly.

At the autopsy, five hours after death, Drs. R. K. Hoffman, John Watson and J. B. Kissam assisted. On turning up the sternum, the thymus, reaching to the scrobiculus cordis, and passing laterally deep into each side of the chest, but not lying upon the lungs, and covering the largest portion of the heart, came into view. It was of a pale red colour, and in form closely resembled that of which a drawing was given in the No. of this

Journal for August, 1837. 'The heart and lungs were in all respects in a healthy condition.

The gland, very soon after its removal from the body, weighed six drachms, two scruples and two grains, or 402 grains; was $2\frac{1}{2}$ inches long and 3 inches across, and $\frac{1}{2}$ an inch in its thickest part. Its inside surface was concave and smooth. 'The head and abdomen were not opened.

It appears, from this statement, that this infant lived for 13 hours from the time when it first appeared to be unwell—that its symptoms resembled those of the child who was the subject of my first observations, whilst they differ from those of any case of enlarged thymus gland recorded previously to that time. I am informed that during the interval which has elapsed between the occurrence of the two cases, a similar condition of the gland was met with by a physician of this city.

The sudden invasion of extraordinarily rapid respiration, and extensive and forcible pulsation of the heart and great vessels, together with dulness of sound on percussion over the anterior portions of the chest, in a child previously healthy, ought certainly to lead us to suspect the existence of tumefaction in the congenitally enlarged thymus gland.

In the March No. of the *Encyclographie des Sc. Med.* is a paper by a Dr. Graf, in refutation of a dictum of Prof. Albers, who, in his observations on the domain of Pathology and Pathological Anatomy, Bonn. 1836, asserts, "The proximate cause of the symptoms which denote the existence of thymic asthma can in nowise arise from the thymus." This sentiment, I presume, will find but few supporters, and it is unnecessary to cite the grounds of Dr. Graf's dissent from it; but the passage in which it is contained is curious, as showing that Prof. Albers has indicated by reasoning, anatomical and physiological, the probable occurrence of the very train of symptoms, which, in my two cases, have been so marked and peculiar.

He proceeds:—"Its anatomical position does not allow of its producing constant pressure upon the air passages, nor even of its irritating them considerably. 'The chief injury which it inflicts is upon the heart and great vessels. Its lower portion rests upon the pericardium, just where lie the auricle and a portion of the right ventricle, and also the large vascular trunk of the heart. Admitting that the symptoms *are* caused by the pressure and irritation which the thymus creates in the neighbouring parts, it is the circulation, rather than the respiration, which is to be interfered with; the symptoms, consequently, should refer to the functions of the first, rather than to those of the second, and the chief will be disorder in the functions of the vascular system. In a word, the phenomena resulting from the augmentation of the thymus will depend more on compression than upon irritation. The very contrary is true with regard to the symptoms of thymic asthma."

The Professor would, no doubt, readily allow the cases I have recorded to result from the thymus gland, and receive them as proofs of the truth of his statement. I do not doubt that the thymic asthma hitherto described depends on the condition of that organ, but it is evident that there is a second form of disease resulting from it, which Dr. Albers first predicted, which I first observed, and which will, I think, be found to be of frequent occurrence.

Dr. Graf, in arguing on the causes of thymic asthma, while he admits the manner in which the gland covers the lungs and heart, contends that

the tumefaction "is particularly observable in the two cornua, which closely embrace (*serrent etroitement*) the larynx and trachea, and also in the thickest portion, which lies directly beneath the manubrium sterni, and immediately on the trachea;" and he says, "it is probable that this *very great* pressure injures seriously (*fortement*) the nervi vagi and inferior laryngeals."

If the reader will look at the plate of the enlarged thymus in the No. of this Journal for August, 1837, he will see that that portion of the gland which lies just beneath the top of the sternum is neither its thickest nor broadest part; that the cornua are too short to reach the larynx, and that the shape of the gland corresponds much more with Dr. Albers' account of its effects. Furthermore, in the second case, the gland had scarcely any cornua, and hence the symptoms must depend on the pressure of the lateral lobes. I would further observe that in the two dissections now made, the gland has always been easily detached from over the trachea, and no evidences have been found of "very great compression." Lastly, any great degree of compression would have been incompatible with the perfectly healthy condition of the lungs in several of the recorded cases of thymic asthma, and in one particularly where the gland weighed 3 oz.!

We are therefore, probably, as yet only imperfectly acquainted with the causes of thymic asthma as hitherto described.

August 23, 1838.

Congenital Club Foot—Division of the Tendo Achillis. By G. W. NORRIS, M. D. one of the Surgeons of the Pennsylvania Hospital.

Jno. O'Donnell, a healthy boy æt. 9, was placed under my care, in May last, with club foot of the right side. Both feet were at birth affected, but by the long continued use of an appropriate machine the left foot had, since three or four years, been brought into a good position. The foot of the right side, though placed in a similar apparatus, had continued without much benefit, and I determined to attempt the cure by the division of the tendo Achillis. The deformity was to such an extent as to prevent any portion of the sole of the foot from touching the ground. The toes were turned much inwards; the heel was drawn upwards about an inch; the astragalus was thrown far outwards, and the body was supported in walking by the projecting astragalus and the outer edge of the foot.

On the 11th of May, the boy being laid upon his face, with the foot strongly extended, I inserted a narrow bladed knife on the inner side, between the integument and the tendon, and divided the latter by turning the edge of the instrument towards its resisting fibres, at the same time that the foot was put in a state of flexion. The complete division of the tendon was made known by a perceptible jerk, which occurred at the time, as well as by the extremities of it being afterwards found to be separated for some distance. But a few drops of blood escaped from the wound, which was so small that no dressing was required. A long splint, with a pad, thick at its lower end, similar to that sometimes used for fractures of the extremity of the fibula, was placed on the outer side of the limb, the pad being made to press against the external malleolus, and the foot drawn outwards and retained nearly in its natural position, by means of a bandage passed around it and over the splint. But little pain followed the operation, and the wound united by the first intention, no inflammation supervening. The foot was maintained in the apparatus during five days, the

bandage being daily reapplied. On the sixth day, a stout laced boot, with an iron leg-piece, and a spring attached to its lower end, for the purpose of throwing the toes outwards, was substituted, and two days afterwards union of the divided ends of the tendon appearing perfect, the patient was suffered to get up and move about.

More than five months have now elapsed since the operation, during which time the boot mentioned has been constantly worn, and although nothing like a perfect cure has been produced, yet I think the patient has been materially benefitted by it. At present (Oct. 15th) the heel is brought down to the ground in walking, and the astragalus projects less than before the division of the tendon, but the foot is still turned considerably inward, and the body is supported principally by the outer edge of the anterior part of the foot.

Balsam of Copaiba in Dysentery.—Influenced by a consideration of the beneficial effects of copaiba in diseases of some of the mucous membranes, and by the testimony to its utility in dysentery, borne by Pemberton, Cheyne, Good, Armstrong, Abercrombie, and other British authorities, Dr. LA ROCHE, of this city, was induced some years ago, to resort to this balsam in a case of dysentery which had proved intractable to the ordinary means. "The effects obtained," were, he says, "such as to encourage me to make further trials of the remedy; and after duly reflecting on the issue of those cases, and on the phenomena presented not only in obstinate but in ordinary cases also, I have no hesitation in expressing the opinion, that, so far as my experience goes, the copaiba is entitled to the praise it has received, and consequently deserves a trial in some forms of the disease in question. It is hardly necessary to say," he adds, "in the present state of our knowledge respecting the uncertainty of the action of medicinal agents generally, that the copaiba cannot be expected to succeed in every case, and that it should not be prescribed in all stages of the complaint. Like other remedies, it will, in this disease, as in other forms of mucous inflammation, often fail, even when used under the most appropriate circumstances; and, so far as I can decide, it would be improper to have recourse to it in the commencement of the attack, before the violence of the inflammation has been reduced by general and local depletion, by diluent drinks, tepid baths, fomentations, mild purgatives, ipecacuanha, opiates, emollient injections, and blisters."

But even in cases in which depletion has been premised to reduce the force of the inflammation, some discrimination is necessary as regards the employment of the copaiba, because it sometimes disagrees with the stomach producing nausea and vomiting. When this is the case the remedy must be discontinued.

"Judging from what I have had occasion to observe," Dr. La Roche further remarks, "I think I may safely say, that the balsam of copaiba is as serviceable in the secondary stages of acute dysentery as in the chronic form, and that it will be found particularly useful when the stools are rather copious, and contain a large proportion of mucus, or glairy matter mixed with blood. When the griping and tenesmus are still very severe, it will be necessary to combine the medicine with a suitable portion of opium; otherwise it may be used without, in an aromatic mixture—in cold water, or in an emulsion. The opium may also be required if the copaiba disorders the stomach, and if this effect can justly be attributed to the simple irritability of that organ. In general it is advisable to give the copaiba in moderate and repeated, rather in large doses; as it is thus less apt to produce griping pain, to purge, and to increase fever. But whether the quantity be large or otherwise, no time must be lost in suspending the remedy, and resorting to antiphlogistics, emollients, and narcotics, whenever symptoms of increased gastro-intestinal irritation and febrile excitement supervene.—*Eclectic Journal of Medicine*, September, 1838.

A Boneless Arm.—A curious case of this, and one, so far as we know, without a parallel on record, is recorded in a late No. (July 11, 1838,) of our cotemporary, the *Boston Medical and Surgical Journal*. The subject of it was a Mr. Brown, now 36 years of age, who, when in his eighteenth year, fractured his humerus near the middle. Reunion was going on favourably, but was not complete, when the patient had a second fall and broke the bone again at the seat of the first fracture. The bone could not be made to unite again; on the contrary, to the surprise of the surgeon, the shaft of each part of the divided bone began to diminish in size, and shorten in length. By a gradual action of the absorbents, the whole of the arm bone, between the shoulder and elbow, was at length completely removed, and that too without any open ulcer, so that not a single vestige of it was left. It has now been in this state for many years, and probably will remain so for life, as there never will be a deposition of bony matter again in that place, nor even a cartilaginous or a condensed ligamentous substitute, which will materially change it from the present singular condition.

“Mr. Brown presents the spectacle of one short arm and one long one. The right fore arm and hand are of a size to correspond with the sound one on the left side, and, under certain circumstances, are equally as strong. Ordinarily the right arm swings hither and thither, like a thong with a weight at the extremity; for the fore arm and hand, with reference to the division above the elbow, constitute a pendulum, oscillating according to the movements of the body. Although it is impossible to push with the defective arm, he can draw a burden towards himself with it as strongly and tenaciously as with the other; and in so doing, the muscles are elongated, so that the arm is extended to its original length. When the resistance is removed, the muscles instantly shorten themselves about six inches. To show the perfect non-resistance of the apparatus of muscles, arteries, veins and nerves in the soft, boneless space, we saw him twist the palm of the hand, the other evening, twice round, which consequently presented the strange anomaly of having all the apparatus of the arm twisted like the strands of a rope. In that state the pulsations of the brachial artery and all its branches and ramifications could be felt under the finger, though passing in gyrations, like a winding stair-case, twice round the soft, unresisting fleshy mass.”

Diabetes melitus in a child of fifteen months old.—An example of this is recorded by Dr. THEODORE S. BELL in the first No. of the *Louisville Journal of Medicine and Surgery*. The occurrence of the disease in so young a subject is far from being unique, as is supposed by the relator of this case, and the editors of the Journal in which it is published. Dr. Eberle mentions a case of the disease in a child of the same age, and several marked cases of infantile diabetes are recorded by Venables in his work on diabetes. According to Dr. Eberle “infantile diabetes seldom occurs *after* the second year of age;” and Dr. Dewees states that “all the children he has seen affected with it were under 15 months old.” A very distinct example of the disease, connected with the process of dentition, and in which the urine was sweet, is related by Morton, (*Phthisiologia*.) Watt says there is no period of life completely secure from the disease.

Club-foot cured by operation.—Dr. A. G. WALTER of Pittsburgh, Pennsylvania, has communicated to us accounts of ten cases of club-foot cured by operation. Dr. Walter divides not only the tendo Achillis and other tendons, but also some of the ligaments. In several cases he states he has found it necessary to divide the following tendons and ligaments: tendo Achillis; tibialis posticus and t. anticus; flexor pollicis longus, and f. digitorum communis longus, et brevis; the ligamentum plantaris, l. cruralis internis et l. deltoideum.

We hope Dr. Walter will furnish us with the details necessary for the clear comprehension of his operation in each case, as we have requested, so as to enable us to insert his memoir in our next number.

A Statistical account of Fractures, treated in the Pennsylvania Hospital, from its foundation, in 1751, to 1838. By J. M. WALLACE, M. D., Resident Surgeon.

Abstract of 197 cases, treated from 1751 to 1800.

Description of Fracture.	Whole number admitted.	Whole number cured.	Number of days required for cure.			Number of days in which greatest proportion were cured.
			Maximum.	Minimum.	Average.	
LEG, Simple	55	41	205	10	87	55 to 65
" Compound	18	7	201	53	104	80 to 90
" Complicated	9	9	591	77	213	180 to 190
THIGH, Simple	11	23	245	29	96	70 to 80
" Compound	1	1	199	199	199	199
" Complicated	10	10	314	42	118	90 to 100
ARM, Simple	34	24	162	21	69	35 to 45
" Complicated	2	2	123	32	77	32 to 123
RIBS	20	13	195	11	50	25 to 35
SKULL	9	4	205	35	137	150 to 160
CLAVICLE	8	7	42	16	29	25 to 35
JAW	6	4	199	40	91	50 to 60
PATELLA	3	3	151	79	114	79 to 151
VERTEBRÆ	1	1	507	507	507	507
PELVIS	1	0	0	0	0	0
STERNUM	1	1	10	10	10	10
WRIST	1	1	255	255	255	255
FINGERS	1	1	31	31	31	31
TOES	1	1	26	26	26	26
Not designated	4	1	72	72	72	72

Abstract of 866 cases treated from 1800 to 1829.

LEG, Simple	249	216	217	10	70	50 to 60	9	12	0	19
" Compound	10	3	220	83	136	80 to 110	6	1	0	0
" Complicated	21	9	518	51	204	55 to 65	5	5	2	0
ARM, Simple	192	168	181	11	48	35 to 45	9	3	0	18
" Complicated	8	5	66	25	48	50 to 60	3	0	0	0
THIGH, Simple	130	106	210	32	110	65 to 75	8	3	0	13
" Compound	2	0	0	0	0	0 to 0	2	0	0	0
" Complicated	18	8	418	77	158	110 to 120	7	2	0	1
CLAVICLE, Simple	61	58	84	9	36	30 to 40	0	0	0	3
" Complicated	2	0	0	0	0	0 to 0	1	1	0	0
RIBS, Simple	45	38	70	6	34	20 to 30	2	0	0	5
" Complicated	7	2	70	43	56	43 to 70	5	0	0	0
SKULL	29	9	133	10	50	40 to 50	16	1	0	3
JAW	22	15	136	11	34	25 to 35	1	1	0	5
PATELLA	12	12	144	33	73	70 to 80	0	0	0	0
VERTEBRÆ	10	0	0	0	0	0 to 0	2	7	0	1
FINGERS, Simple	10	1	63	20	43	40 to 50	1	0	0	3
" Compound	1	1	74	74	74	74	0	0	0	0
ELBOW	8	6	106	28	51	35 to 45	0	0	1	1
FIBULA	6	5	175	51	99	100 to 120	0	1	0	0
NOSE	4	2	22	9	15	9 to 22	0	0	0	2
SHOULDER	4	3	58	26	39	25 to 35	0	0	0	1
SCAPULA	3	3	131	41	71	51 to 131	0	0	0	0
PELVIS	3	2	54	30	42	30 to 54	0	0	0	1
FOOT	3	2	128	121	124	120 to 130	1	0	0	0
TOES	3	2	130	9	69	9 to 130	0	0	0	1
ANKLE	3	2	66	42	54	42 to 66	1	0	0	0
HAND	2	2	48	23	35	23 to 48	0	0	0	0
Not designated	1	1	19	19	19	19	0	0	0	0

Abstract of 735 cases treated from 1829 to 1838.

Description of Fracture.	Whole number admitted.	Whole number cured.	Number of days required for cure, in adults.				No. of days required for cure in children under 18 years.				Died from the immediate effects of injury.	Died subsequently.	Terminated by amputation.	Removed while under treatment.
			Maximum.	Minimum.	Average.	Number of days in which greatest proportion were cured.	Maximum.	Minimum.	Average.	Number of days in which greatest proportion were cured.				
Leg, Simple .	172	150	516	14	74	55 to 65	88	44	64	55 to 65	11	5	1	5
“ Compound .	37	21	374	54	141	90 to 100	103	79	91	79 to 103	8	5	2	1
“ Complicated	8	6	103	48	76	50 to 80	206	206	206	206	1	1	0	0
Arm, Simple .	161	142	191	9	32	25 to 30	133	7	39	25 to 35	1	1	0	17
“ Compound .	11	4	381	17	156	17 to 381	54	54	54	54	4	2	1	0
“ Complicated	10	6	81	42	54	45 to 55	0	0	0	00	2	0	1	1
Clavicle, Simple .	75	63	68	8	31	20 to 30	39	15	23	20 to 30	0	0	0	12
“ Complicated	2	1	75	75	75	75	0	0	0	00	1	0	0	0
Thigh, Simple .	73	60	254	40	92	65 to 75	137	14	66	not fixed.	7	0	0	6
“ Compound	10	1	0	0	0	00	45	45	45	45	4	3	2	0
“ Complicated	12	8	174	102	138	102 to 174	221	45	98	60 to 70	3	1	0	0
Neck of thigh .	4	0	0	0	0	00	0	0	0	00	0	0	0	4
Skull, Simple .	31	13	156	14	57	20 to 60	115	18	66	18 to 115	15	1	0	2
“ Compound	3	1	0	0	0	00	69	69	69	69	2	0	0	0
“ Complicated	2	0	0	0	0	00	0	0	0	00	2	0	0	0
Ribs, Simple .	35	29	116	4	29	20 to 30	0	0	0	00	3	1	0	2
“ Complicated	3	2	72	21	46	21 to 72	0	0	0	00	1	0	0	0
Jaw, Simple .	17	11	58	17	38	30 to 40	126	33	79	33 to 126	4	1	0	1
“ Compound .	2	2	0	0	0	00	126	25	77	25 to 126	0	0	0	0
Patella, Simple .	12	11	151	45	70	60 to 70	0	0	0	00	0	0	0	1
“ Compound	1	1	140	140	140	140	0	0	0	00	0	0	0	0
Fingers, Simple .	8	4	108	17	52	17 to 108	0	0	0	00	1	0	2	1
Fibula, Simple .	6	5	47	25	33	25 to 35	0	0	0	00	0	0	0	1
“ Complicated	1	1	73	73	73	73	0	0	0	00	0	0	0	0
Elbow, Simple .	8	8	74	19	51	40 to 50	44	37	40	37 to 44	0	0	0	0
“ Compound	3	3	336	55	197	54 to 336	0	0	0	00	0	0	0	0
Scapula, Simple .	6	4	106	16	46	35 to 45	0	0	0	00	0	1	0	1
Vertebrae .	4	0	0	0	0	00	0	0	0	00	1	3	0	0
Pelvis, Compound	1	0	0	0	0	00	0	0	0	00	1	0	0	0
“ Ilium, simple	3	3	113	34	62	34 to 113	0	0	0	00	0	0	0	0
Ankle, Simple .	2	1	39	39	39	39	0	0	0	00	0	0	0	1
“ Compound	2	1	463	463	463	463	0	0	0	00	1	0	0	0
Sternum, Simple .	3	2	26	15	20	15 to 26	0	0	0	00	0	0	0	1
Nose, Simple .	2	2	19	15	17	15 to 19	0	0	0	00	0	0	0	0
Not designated .	5	4	225	50	107	50 to 225	0	0	0	00	1	0	0	0

Medical Examiner, January 17, 1838.

Amputation of nearly one-half of the Lower Jaw Bone for Osteo-sarcoma.—This operation has been lately performed by Prof. PAUL F. EVE, M. D., of Augusta, on a negro woman 25 years of age. No particular description of the dis-

ease is given; the tumour is stated, however, to have been large and to have gradually developed itself around the left half of the lower jaw bone.

"May 31. The operation was commenced by making an incision from the left angle of the mouth, and extending it in a perpendicular line to the thyroid gland, from which an elliptical one was made to the lobe of the left ear, including the most prominent part of the tumour in the ellipsis. Upon cutting through the lip and denuding the lower jaw-bone, we found an effort of nature at separation near its symphysis. Extracting the canine or stomach tooth, the bone was divided by a small saw, half an inch beyond the line marked by the absorbents. The next object was the removal of the inferior maxillary on the affected side from its connection with the temporal bone, or of its division, provided the disease was arrested in it short of this articulation. By careful dissection, a line was perceived and defined by the absorbents in the lower part of its neck. The saw was again employed, leaving only the condyle with a small portion of the neck, and the operation was completed by detaching the insertion of the temporal muscle into the coronoid process of this bone, which was removed with the diseased mass. The section of the lower jaw-bone measured at its base four and three-fourth inches.

"The outer surface of the portion of bone removed, was very rough and denuded of its periosteum, to which latter was attached a large irregular fungous growth, varying in consistency from cartilage to fibrous structure, and extending into the skin and surrounding tissues—there being nothing in this direction like a cyst or even decided limit to the disease. The periosteum of the inner surface of the bone was not completely detached from it, and to it were also adherent large masses of fungus, which had filled the mouth, pushing the tongue to the right side, and projecting down the throat. These had an investing membrane of a delicate structure, and resembled large irregular tubercles. The artery of the lower jaw-bone was entirely obliterated, and its canal was greatly enlarged and made very rough by the action of the absorbents. At both the divisions, however, made by the saw, this bone bled freely, thereby proving that at these places it was sound and unaffected by the disease which had destroyed a portion of its body.

"As the patient had fainted several times during the operation, though sustained by stimuli, and as the tumour was not encysted, it was found impracticable to remove every part which had become affected by the diseased action. We had, moreover, proceeded in this case upon the principle, that the disease originated in the bone, and that if the root and body of the tumour were extracted, its projections into the surrounding tissues would necessarily be absorbed. A small tubercle was, therefore, left under the zygomatic arch, together with some enlargement in the skin over the left carotid artery, and also over the thyroid cartilage.

"The application of three ligatures to as many arteries, some eight on ten sutures in the skin, with adhesive strips and patent lint to fill up the cavity made by the removal of the jaw-bone and tumour, with a bandage, completed the dressing; and the patient was placed in bed, after having been on the operating table three hours. Much of this time, however, was consumed in restoring her from syncope.

"At eight and a half o'clock, seven hours after the operation, found the system of the patient re-acting. Took at four and a half, a teaspoonful of common solution of morphine, which afforded much relief, and was swallowed with ease."

The patient's system soon revived and nothing of note occurred until the 5th June, when, as the sutures were removed, "union by the first intention took place at the lip and near the lobe of the ear. The skin in the angle of the wound near the thyroid gland sloughed, and at one or two other points where the stitches had been applied. The patient gradually improved, granulations commenced on the 9th day after operation."

The last of June, Dr. Eve "saw with regret, that diseased action, apparently of the most malignant nature, had not only commenced in the skin, but had also invaded the sound cicatrix. Kreosote, iodine, &c. were now freely employed, but seemingly to little purpose, and Dinah left on the 9th of July for the country."

On the 3d of August, (more than two months since the operation,) Dr. E. learned that his patient had much improved. The diseased skin had sloughed off, and the only tumefaction then existing was in the right submaxillary gland. There was no enlargement under the zygomatic arch, nor in the course of the left carotid. Her appetite was good, and she took exercise daily.

Yellow Fever of Charleston.—(Extract from a letter to the Editor.) Accounts, no doubt, reach you daily, of the ravages of pestilence in our ill-fated city. Like all rumours, I presume, these lose nothing by extension; but with even a liberal discount for the truth, the actual condition is melancholy enough. While the ruins, occasioned by the fire, were yet smoking, our busy ones sounded their prophetic forebodings that pestilence would ere long follow in the wake. These prophesies have, alas! proved too true: but, so far as I can ascertain, from a careful consideration of all the circumstances, the cause alleged has had nothing to do with the development of the disease; or, if it has had any agency, it can only be considered one among several causes—the most fruitful of which have been, a summer presenting an elevation of temperature altogether unknown in our climate, and a crowded population of strangers, badly lodged and provided for, of dissolute habits, and unwilling to submit to those salutary restraints so necessary to be observed by those not accustomed to our climate. The great demand for labour, and high wages, attracted to our city an immense population of this kind, and it has been amongst persons of this class that the disease has made its greatest ravages.

The first cases occurred in the neighbourhood of the shipping, late in July, and for two or three weeks the disease was chiefly confined to streets not very remote from the wharves. It has since spread to nearly all parts of the city, selecting out strangers and children as its chief victims, attacking in no case, as far as my observation has extended, individuals who could be considered *properly acclimated*. It seems now to be on the decline—rather, I am inclined to think, from the scarcity of subjects than from any diminution of the activity of the cause. We do not anticipate an entire cessation until a good frost shall come to our relief. The years 1817 and 1824, hitherto considered as the most fatal of our yellow fever visitations, will not equal the present in mortality. In 1817 the total number of deaths was 268. In 1824, 236. I suspect we have already reached the highest of these numbers the present season. The last weekly report, ending Saturday, September 29th, was 49. The preceding week 68. The report for the last week, ending Saturday, October 6th, has not yet been published.

I could not, were I to make the attempt, give you any proper idea of the character of the disease, or of the different methods of treatment pursued. The latter have, as usual, been sufficiently diversified to suit every taste, or fulfil every end, except the most important ones, of adaptation to the pathological conditions, and curing the patient. My own treatment has been mainly antiphlogistic, and within the first 48 hours actively so. The pain of the head, back and limbs, has been, in nearly every case I have seen, so excruciating, as to require the fearless use of the lancet; and even when the temperature has been but slightly elevated, and the pulse presenting but little force or volume, I have drawn blood, with the patient in the recumbent posture, until the urgent symptoms were removed. A recurrence of severe pain was the signal for a recurrence to the lancet, or to free cupping, (*leeches could not be obtained*,) according to circumstances. Most of the cases, especially the worst ones, have been characterised by extreme torpor of the capillaries of the surface. Here the patient, if practicable, was immersed in a bath of a temperature of 100°, or more, bled in the bath, and well rubbed when put into bed. The next step was to open the bowels freely—first by copious enemata, afterwards by saline cathartics. I have generally preferred a solution of manna and Rochelle salts—but a decoction of seneca, saturated with Epsom salts, is regarded by our people as a kind of panacea. I think it does much harm. Repeated enemata, fomentations to the abdomen, cold to the head, ice and iced drinks, sinapisms to the spine, abdomen, extremi-

ties, &c. Cups to meet local determinations, have been plied diligently, and after evacuating the bowels freely, where the stools have exhibited a serous character, I have given occasional portions of calomel, alone, or combined with James's powder. The mercurial practice, *stricte sic dicta*, I tried fully in the early part of the epidemic, because of my inability to obtain the needful appliances to pursue my own course, and because, also, it was spoken favourably of by some who affirmed that others had failed because they did not push it to a sufficient extent. In one case I gave 60 grains every three hours during the first day—20 grains, at similar intervals, on the second day. It failed both in procuring salivation, and in controlling the disease. I succeeded with it in only one bad case, but in several of a milder type. Hæmorrhage and black vomit are the general attendants on the second stage. I shall not, at present, say any thing of the treatment of this stage; but at some future time, should no more competent hand occupy the ground, I may give you some account of the characters of the disease, and the results of my experience.

Charleston, Oct. 10, 1838.

Outler on Dressing and Bandaging.—This is a useful manual for the young student. It is divided into two parts; the first treats of dressings and bandages in general, and the principles of their application; the second of bandages in particular, classed according to the regions of the body to which they are to be applied.

It is to be regretted that the American reprint should be from the first, instead of the second London edition, published in 1836, as this last contains numerous improvements—among others an account of Mayor's new system of bandaging and suspension.

Lee's Human Physiology.—This reached us so late that we have been enabled merely to glance over its pages; but this superficial examination has impressed us favourably as to its merits.

Hayward's Report of the Surgical Cases and Operations in the Massachusetts General Hospital.—This, as might be anticipated, from the established reputation of the author, is a valuable report. We regret that it did not reach us in time to enable us to notice it in our Bibliographical department.

Proposed Annual National Convention.—At the Annual Meeting of the New Hampshire Medical Society, holden in June last, it was voted, that "This Society recommend an Annual National Convention, to consist of Delegates from the various Medical Schools and Societies in the Union; that the first Convention be proposed to be holden A. D. 1840: and that the Secretary send a notice of this vote to the Boston Medical and Surgical Journal, and the American Journal of Medical Sciences at Philadelphia."

JAMES B. ABBOTT.

Secr'y N. H. Med. Society.

Boscawen, Oct. 1838.

Forthcoming Works.—A new edition of Forbes's Translation of Laennec on Diseases of the Chest, to which are added a translation of the notes of Professor Andral, contained in the last edition of the original work, and some remarks on cerebral auscultation. By J. D. Fisher, M. D. of Boston. From the press of Samuel Wood and Sons, New York. (Nearly ready.)

A New Edition of Dunglison's Medical Dictionary; in one volume. Lea & Blanchard. (In press.)

A Translation of Billard's Treatise on Infantile Diseases. By James Stewart. New York, French & Adlard. (Preparing.)

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IN consequence of the extended circulation of the AMERICAN JOURNAL OF THE MEDICAL SCIENCES, the Proprietors intend, in compliance with the wishes of many of their friends, to prefix to each No. a Sheet of Advertisements. All Booksellers, Medical Gentlemen, and others desirous of taking advantage of this mode of announcement, will please address their Advertisements to LEA & BLANCHARD, Philadelphia, by the 10th day of the month preceding that of the publication of the Journal, viz: on 10th July, 10th October, 10th January, and 10th April.

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UNIVERSITY OF PENNSYLVANIA.

MEDICAL DEPARTMENT.

THE Lectures commence annually on the first Monday of November, and continue until the ensuing March.

Theory and Practice of Medicine,
Institutes of Medicine,
Special and General Anatomy,
Materia Medica and Pharmacy,
Chemistry,
Surgery,
Obstetrics and Diseases of Women and
Children,

By NATHANIEL CHAPMAN, M. D.
 By SAMUEL JACKSON, M. D.
 By WILLIAM E. HORNER, M. D.
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 By WILLIAM GIBSON, M. D.
 By HUGH L. HODGE, M. D.

Clinical Medicine and Surgery taught by the prescribing Medical Officers at the Blockley Hospital, under the Guardians of the poor, and at the Pennsylvania Hospital.

W. E. HORNER, M. D.
Dean of the Medical Faculty.

MEDICAL COLLEGE

OF THE

STATE OF SOUTH CAROLINA.

THE annual course of Lectures of the Medical College of the State of South Carolina, will commence on the second Monday of November.

J. EDWARDS HOLBROOK, M. D.,	<i>Professor of Anatomy.</i>
JOHN WAGNER, M. D.,	<i>Professor of Surgery.</i>
S. HENRY DICKSON, M. D.,	<i>Professor of Institutes and Practice of Medicine.</i>
JAMES MOULTRIE M. D.,	<i>Professor of Physiology.</i>
THOMAS G. PRIOLEAU, M. D.,	<i>Professor of Obstetrics.</i>
C. M. SHEPARD, M. D.,	<i>Professor of Chemistry.</i>
HENRY R. FROST, M. D.,	<i>Professor of Materia Medica.</i>
E. GEDDINGS, M. D.,	} <i>Professor of Pathological Anatomy and Medical Jurisprudence.</i>
F. WURDEMAN, M. D.,	
	<i>Demonstrator of Anatomy.</i>

SAMUEL HENRY DICKSON, M. D.,
Dean of the Faculty.

UNIVERSITY OF THE STATE OF NEW YORK.

COLLEGE OF PHYSICIANS AND SURGEONS OF NEW YORK.

The Lectures in this Institution will commence on the first Monday in November and continue for four months.

J. AUGUSTINE SMITH, M. D., Professor of Physiology.

ALEXANDER H. STEVENS, M. D., Professor of Clinical Surgery. (Lectures at the New York Hospital.)

JOSEPH MATHER SMITH, M. D., Professor of the Theory and Practice of Physic and Clinical Medicine.

EDWARD DELAFIELD, M. D., Professor of Obstetrics and the Diseases of Women and Children.

JOHN B. BECK, M. D., Professor of Materia Medica and Medical Jurisprudence.

JOHN TORREY, M. D., Professor of Chemistry and Botany.

JOHN R. RHINELANDER, M. D., Professor of Anatomy.

ALBAN G. SMITH, M. D., Professor of the Principles and Practice of Surgery.

The expense of attending a Course of Lectures by all the Professors, is \$108.

Attendance upon two complete courses of Lectures is necessary to entitle the student to present himself for graduation, one of which must have been attended at this college. He must also have studied medicine three years, and attained the age of twenty-one years.

Two opportunities in each year are afforded for graduation: one on the first Tuesday in April, and one on the last Tuesday in October.

The examination of Candidates for the Spring graduation commences on the first of March, and for the Fall graduation on the 2d Tuesday in September.

College Building. During the last year, the new and extensive College edifice in Crosby street has been completed. In its construction, no effort has been spared to provide within its walls every accommodation that may be necessary for carrying on the business of instruction in the various departments of Medical Science, and it is believed that in no one respect will it be found wanting in the great objects for which it was designed. To the planning of the Anatomical part of the building, especial attention has been paid, with the view of furnishing every convenience and accommodation that may be required for teaching Anatomy, as well as for private dissection. In addition to the public dissecting room, a number of smaller rooms have been fitted up, where Anatomical investigations may be pursued in a more retired and private manner.

New York Hospital. This Institution accommodates about two hundred and fifty patients, and presents every variety of disease and accident to which the human frame is liable. Situated in the very heart of the city, and within a few minutes' walk of the College, it possesses the great advantage of being easy of access, without any loss of time, and the students have daily opportunities of witnessing the practice of the house.

New York Ear and Eye Infirmary. The average number of patients who resort annually to this Institution for professional advice, amounts to upwards of one thousand. It thus furnishes the amplest field for observation and instruction in the various degrees of the Eye and Ear. It is opened gratuitously to the students of the College.

J. AUGUSTINE SMITH, M. D., Pres't.
N. H. DERING, M. D., Registrar.

New York, June 25, 1838.—tf

**GEO. W. CARPENTER'S
PRECIPITATED EXTRACT OF BARK.**

A valuable substitute for the Sulphate of Quinine,

**FULLY EQUAL TO IT IN THE SAME DOSES,
AND AT ONE DOLLAR PER OUNCE.**

I beg leave earnestly to call the attention of the Faculty to the following valuable preparation, which is preferred by many physicians to the sulphate of quinine; and I should suppose few physicians would use the latter while they can get this extract, equally efficient as quinine, in the same doses, and at so comparatively low a price.

Carpenter's Precipitated Extract of Bark; containing Quinine, Cinchonine, the new organic alkali Chiniodine, and all the active principles of Peruvian Bark, except the ligneous fibre, and possessing all the febrifuge properties of Quinine, in the same doses; and at about *one-third the price*.

As the sulphate of quinine has become scarce, and increasing in price, it is an object of the highest importance to the community to obtain a preparation of equal efficacy at a reduced price. The above extract we are pleased to find, will effect this object in the strictest application, and being the product of the same cinchona, and containing, in addition to the quinine, other alkalies of the same bark, of equal if not superior efficacy to the quinine, it unquestionably will meet the approbation of the faculty and will no doubt be fully tested by the experience of our most distinguished physicians. It has frequently been asserted by chemists and scientific authors on cinchona, that there, no doubt, existed other active alkaline principles, or extractive matters in addition to those already discovered in the bark; and the conclusive facts in relation to the use of quinine, the use of bark and that of the residuary extract, corroborate the truth of this assertion. It is well known that numerous cases of intermittents have yielded to the use of bark in substance, which have resisted quinine, even when long continued, and in large and repeated doses, to the extent of six or eight grains. And we have the evidence of the late Dr. Emlen, who was the first to use the residuary extract of bark, after the quinine was separated, and who asserts he discovered the happiest effects in its exhibition, in doses of two grains; and that it was in no respect inferior to the sulphate of quinine; and Drs. Parrish and Wood, distinguished members of the profession in this city, found the result of their practice fully successful.*

Dr. Serturmer, chemist, of Hamelin, likewise confirmed what has been observed by others, that, as a tonic, quinine cannot be substituted for cinchona, and made analytical researches on the bark, to discover the cause of the difference. The precipitate obtained by treating the acidulous extract of cinchona by alkalies, comprises, beside quinine and cinchonine, certain additional organic alkalies. These new organic alkalies, especially the principal one, which Dr. S. calls chiniodine, are intimately united with a sub-acid, resinous substance: The new alkali exists in the cinchona bark associated with quinine and cinchonine, and they are all precipitated together in the above extract. The chiniodine resembles the other alkalies of cinchona in its solubility, colour, and taste; but it is distinguished from them by its activity, its greater capacity of saturation, its alkaline reaction, and its intimate combination with an extractive matter. Dr. Serturmer further states, that, as a medicine, chiniodine is one of the most precious agents of the materia medica. It is not only a better febrifuge than quinine, and even than the bark in substance, but it possesses many other therapeutic properties, which, admitting that they exist in the bark itself, are not to be found in quinine. It was prescribed by Dr. S. in the dose of two grains, three times a day. In all the cases treated by the new remedy, the fever was cut short, without relapse and in every instance the concomitant symptoms, such as paleness of the face, loss of appetite, œdema of the legs, &c. disappear in a shorter time than is usually the case. The medicine failed only in a single instance. The quantity necessary for a cure was generally from twelve to twenty-four grains.†

The above extract is kept of two degrees of consistence; the soft can be made into pills with the addition of liquorice powder or starch, and the hard can be pulverised and

* See Journal of the Philadelphia College of Pharmacy, vol. i. page 44.

† See Journal des Progres for 1829, vol. iii.

made up with conserve of roses or syrup. It can be made into a solution in either state, with water, by the addition of one drop of sulphuric acid to each grain of the extract.

The following formula is an elegant mode of exhibition, which produces a beautiful transparent solution.

R. Precipitated Extract of Bark	-	-	-	-	-	48 grains.
Acid sulphuric	-	-	-	-	-	40 drops.
Alcohol	-	-	-	-	-	2 drachms.
Aqua Cinnamon.	-	-	-	-	-	4 ounces.

M.

Drop the sulphuric acid in the alcohol with about two drachms of water, which should be used to triturate and dissolve the extract, after which the remaining water should gradually be added. If alcohol is inconvenient, it can be made without it, and common water can be substituted for the cinnamon.

MM. Henry and Delondre, of Paris, differ in their opinion with Serturmer, and consider what he denominates chiniodine to be a compound of quinine and cinchonine, associated with a peculiar yellowish substance, of very difficult separation. I think the opinion of Serturmer to be correct, as it is supported by numerous pharmaceutical facts and characteristic properties of the substance. The peculiar yellowish substance of very difficult separation, described by Henry and Delondre, is, no doubt, also an active component of this extract; and we find in a number of vegetable crystalline products, that they frequently owe their activity to certain principles associated by their crystallization, and if rendered entirely pure, they are feeble or inert. Thus, piperine owes its activity to the resinous oil which is associated, more or less with it; and in proportion as it contains this or is deprived of it, is its activity increased or diminished. It has been fully ascertained, that one drop of the oil is equal to three grains of piperine. Thus also it is with narcotine, which is more or less associated with a viscid substance resembling caoutchouc, an acid and extractive matter in combination: and in proportion as the crystals are deprived of this combination, and are rendered pure and white, is its activity diminished. In the process of denarcotizing opium, this product is obtained with the narcotine, but it is not to narcotine that opium owes its stimulating and unpleasant properties, but to this compound. Majendie states that one grain of narcotine dissolved in oil, has a powerful effect on the animal system, resulting in death. My experiment with narcotine differs exceedingly from the above, having given several grains without any sensible effect whatever; and a physician of this city who has made a number of experiments on this salt, in a pure state, informs me that it possesses little or none of the narcotic or stimulating powers; that he took ten grains of it at once, and that it produced no other effect than a slight nausea; but associated as it is in its first extraction from opium, with the peculiar substances before named, it possesses very active and deleterious properties.*

Quinine, when it was first made, contained a portion of extractive matter associated with it; and it is a fact well known to every physician who has employed this salt extensively, that it is not as active as it formerly was, and that it requires a larger dose for patients unaccustomed to the use of quinine.

We also know that the common manna is more active than the flake, and it could be so purified that it would not be more active than white sugar. The seeds of the palma christi contain, no doubt, two oils, one bland and the other acrid, and in proportion as they are united, by the difference in the process of manufacture, is this oil increased or diminished in activity; thus the cold expressed is more bland and less active than the hot pressed. The acrid oil resides in the skin of the beans, and is obtained in greater proportion in the latter. If the oil were obtained from the skins alone, it would no doubt be as active as the croton, for if we swallow one or two of the beans with the

* Dr. Tully, in a highly interesting paper on Narcotine, published in the xxi. volume of the American Journal of Science and Arts, although differing with me as to the degrees of activity, of this substance, states that it is less active on the human system than opium itself. That from two to five grains constitutes a medium full dose, where a single dose is to be taken. That it is entirely destitute of all stimulating powers, whether it is given in full or in moderate and uniform doses, at regular and short intervals; but that it possesses soporific effects greater, in proportion to its powers, than the sulphate of morphia.

He concludes by stating that he does not esteem it by any means impossible that the bitter principle, or extractive (so vaguely called,) or perhaps some other part of this complex drug may yet be found to contribute something to its medicinal effects.

skins, the action is very powerful. I would by no means infer, that in all cases of the combination of vegetable proximate principles such effects would result; we know, indeed, some instances to the contrary; but in the cases above referred to, there will probably be no diversity of opinion.

In relation to the precipitated extract of bark, I must further state, that I have endeavoured to have it tried as extensively as possible, and the result has been most satisfactory; by many physicians it is preferred to the quinine, and they will probably use the latter rarely, when they can obtain this extract at so low a price.

I would wish it to be particularly understood, that this is not the same as that formerly sold under the name of extract of quinine, as it contains all the essential properties of the bark, and is destitute of no principle except gummy matter, gluten, and the woody fibres, which are inert.

Numerous letters have been received, all testifying strongly in favour of this preparation; it is decidedly equal to the sulphate of quinine in the same doses, and I am greatly surprised that physicians should make use of the quinine while they can get this article, equally efficient in the same doses, and at so comparatively low a price.

I select a few letters from several highly respectable physicians whose observations are entitled to entire confidence.

Extract of a letter from Dr. E. B. Martin, a respectable physician of Bowling Green, Kentucky, dated August 23, 1833:

Dear Sir: Your precipitated extract of bark is a very valuable remedy in intermittent fevers, and I wish no other article while it can be obtained.

To Mr. G. W. Carpenter.

E. B. MARTIN, M. D.

Extract of a letter from Drs. Seldon and Mosely, highly respectable physicians of extensive practice in Norfolk, Virginia, dated August 9, 1833:

Dear Sir: We have found your precipitated extract of bark very efficacious in the cure of intermittents; we think it is fully equal to the sulphate of quinine. Please send us sixteen ounces of it by first opportunity.

To Mr. G. W. Carpenter.

SELDON & MOSLEY.

Extract of a letter from Dr. J. B. Hereford, a highly respectable physician of considerable practice at St. Francisville, dated February 22, 1834:

Dear Sir: I have found your precipitated extract of bark very useful, particularly in quartan ague; I have succeeded in curing three cases of quartan ague with it, when the quinine failed entirely. I consider it a highly valuable preparation.

To G. W. Carpenter.

J. B. HEREFORD, M. D.

Extract of a letter from Dr. J. T. Persons, a respectable physician of Warrenton, Georgia, dated July 20, 1835:

I am much pleased with your precipitated extract of bark, which I generally use combined with quinine, in equal proportions. With this combination, I have never failed, in any instance, in effecting a cure, without the occurrence of another paroxysm, and my experience with it is by no means very limited.

Respectfully, &c.

Mr. George W. Carpenter.

J. T. PERSONS.

Extract of a letter from Dr. R. O. Warrimer, a physician of extensive practice at Hillsborough, Illinois, dated August 5, 1835.

I am much pleased with all your preparations, but especially the precipitated extract of bark; which I consider superior to any tonic yet in use, in the cure of intermittents. Living as I do in a country where intermittents exist to a very great extent, I have had ample opportunity of testing the powers of your extract of bark in the cure of that disagreeable affection, and now use your preparation altogether in preference to quinine, and so do most of our neighbouring physicians.

With esteem and respect, yours,

Mr. George W. Carpenter.

R. O. WARRIMER.

The following letter is from Dr. R. Genley, a very respectable physician of Washtenaw county, Michigan territory, dated Saline, June 11, 1835:

Sir: I take the liberty to address you on a subject that interests me considerably, and probably yourself much more. It is in relation to your precipitated extract of bark; a better tonic in diseases of malarian origin, than I have before found. But why is it not more generally in market? I, this spring, sent to New York, to my druggist, for it, but he assured me he searched for it some time, and could not find it, and most

druggists told him they had never kept it. I trust you have not discontinued its manufacture; and if not, and you dispose of it through agents only, I would suggest the propriety of making more agents, as I am sure no physician would be without it, if once acquainted with its merits, and I am equally sure that, not one physician in twenty know any thing of it. Can a similar preparation be made from our *Cornus Florida*, or *Dogwood*, (New England *Boxwood*.) What is the price of your extract at your Laboratory? At what place in New York can it be had? Many of my medical friends are much in want of it. Your extract of pink, I have just received, but have not yet tested it.

Yours, with gratitude,

Mr. Carpenter, Chemist, &c.

R. GENLEY, M. D.

Extract of a letter from Dr. S. A. Smith, of Dover, Mason county, Kentucky, dated September 19, 1838.

I have tried your precipitated extract of bark and think it superior to the quinine in intermittent fever.

The above extract will be sold at about one-third the price of quinine; and as it is of equal if not superior efficacy to the latter, it will no doubt be extensively used, and can always be had at Carpenter's Chemical Warehouse, No. 301 Market Street, Philadelphia.

N. B. Physicians who do not send direct to me, will please be particular to order George W. Carpenter's Precipitated Extract of Bark, or they may get another and perhaps an entirely different article from that described above.

POSTSCRIPT. I have just observed a paper in the London Medical Gazette for December, 1831; in which Mr. R. Battley gives a detailed analysis of the cinchona. He finds it to consist of thirteen distinct principles, from quinine to the woody fibre. They all possess active principles, except three. The sulphate of quinine, in consequence of the absence of all the other properties above alluded to, can therefore be but partially efficient as a medicine. Thus the researches of Mr. Battley have corroborated my statements in relation to the extractive matter of peruvian bark. This gentleman has suggested the propriety of using the liquor cinchona as a medicine, and maintained its decided superiority, since it contains all the principles of the bark above described except the three objectionable ones, viz: gummy matter, gluten, and the woody fibre. This liquor, Mr. Battley observes, is admitted by many competent judges to be superior to the quinine; and as it is prepared by the same process as the quinine, which excludes these three principles and contains all the rest, it would, on evaporation make precisely the same extract, as I have described under the name of the precipitated extract of bark.

CARPENTER'S

IMPROVED MEDICAL SADDLE BAGS.

This very convenient appendage for the country practitioner is made of a new construction, it contains thirty-five square bottles made of extra weight, and ground in a superior manner, expressly for the purpose. The bottles are neatly labelled with gold, and filled with choice medicines. On lifting the leather cover on either side, the bottles are all displayed similar to the wings of a medicine chest—as follows:

14 Two ounce Tincture Bottles, containing

Es. Ment. Pip.	Tinc. Opii Comp.	Vin. Colch.
Ol. Ricini.	Vin. Antim.	Æther. Sulph.
Mel. Scil. C.	Spts. Nit. Dulc.	Tinct. Guaiac.
Syr. Scillæ.	Aq. Ammon.	Tinct. Myrrh.
Tinct. Opii.	Acet. Opii.	

21 Half ounce Salt Mouth Bottles, containing

Ipecac.	Secale Cornut.	Argent. Nit.
Quinine.	Jalap. Pulv.	Potass. Carb.
Pul. Doveri.	Aloes Pulv.	James' Powder.
Pul. Opii.	Pulv. Scill. M.	Rhei Pulv.
Morphia.	Acet. Plumbi.	Precip. Rub.
Tart. Antim.	Calomel.	Kreosote.
P. Nitre.	Camphora.	Zinci Sulp.

There is a pocket on each side of the bag for surgical instruments or other articles.

The price of the bags with gold labels and filled with medicine is \$25, gold labels and without medicine \$20, for the bag and bottles unlabelled \$15.

Different practitioners have their own particular remedies, and those who wish any of the bottles varied as to labelling, can have any alteration made which they may point out.

G. W. Carpenter having incurred considerable expense in getting brass bottle moulds made expressly for the saddle bags above described, and taken special care in having bottles made of suitable weight and strength and otherwise superior, he hopes those who may wish a medical saddle bag to send their orders direct to him, and begs leave to inform physicians at a distance, that there are some made in imitation of his, and very inferior bottles used, and also inferior workmanship in the construction of the bag. Those sold by the subscriber have his name blown in the glass of each bottle and the words *Carpenter's Medical Saddle Bags*, stamped on the leather of each bag by which they may be known.

For sale at

GEO. W. CARPENTER'S

Chemical Warehouse, No. 301 Market Street, Philadelphia.

Also for sale as above medicine chests for country practitioners, suitable for carrying in a sulkey.

WARREN ON TUMOURS.

SURGICAL OBSERVATIONS ON TUMOURS,

WITH CASES AND OBSERVATIONS,

BY

JOHN C. WARREN, M. D.

Professor of Anatomy and Surgery in Harvard University, and Surgeon in the Mass. General Hospital.

The following is taken from the American Journal of the Medical Sciences: Professor Warren's Work on Tumours.—We are extremely gratified to find that this valuable work of our eminent countryman is duly appreciated abroad—it is noticed in the Edinburgh Surgical Journal, (Oct. 1837,) high critical authority, in the following complimentary terms: "The present work possesses substantial merit, which cannot fail to recommend it to the serious and attentive study of all those who are best acquainted with the practical difficulties of this most difficult, variable and unsettled department of Surgery. The history of the different operations given by Dr. Warren, is alone sufficient to stamp a high value on the work; and when the surgeon who has similar cases to treat, and tumours equally difficult to remove, learns from Dr. Warren, the difficulties against which he has to contend, and the manner in which he encountered and overcame them, he will feel that he has derived from the instructions of that author, much more beneficial aid and information, than any that could be conveyed by mere attention to methodical arrangement." Much space is devoted to an analysis of the work in the October number of the Medico-Chirurgical Review, and the reviewer observes: "Our ample extracts will evince our sense of the practical interest which attaches to the present work," and promises to return to it in the next number.

For sale at the Bookstore of E. L. Carey and A. Hart, S. E. corner of Chesnut and Fourth Streets.

THE LIFE OF SIR WALTER SCOTT, BART

BY

J. G. LOCKHART, ESQ.

HIS LITERARY EXECUTOR,

IS NOW COMPLETED IN TWO VOLUMES, OCTAVO,

AND SEVEN VOLUMES, DUODECIMO;

Handsomely Bound in Embossed Cloth.

From many Criticisms the following are selected.

The appearance of Lockhart's Life of Scott has been looked forward to with no ordinary degree of expectation. The interest which its announcement excited was as general as it was intense. It is impossible that the task of bringing out such a book could have fallen into better hands. J. G. Lockhart is a man whose high character, independent of his relationship, insures the absence of every thing improper or indecorous in a biographical work, and whose eminence as an author is a sufficient guarantee for the good taste and ability with which the whole plan and details will be managed. If any thing were wanting to prove Mr. Lockhart's fitness for the duty which has devolved upon him, it is to be found in his "Life of Burns."—*Aberdeen Herald*.

We have here a recurrence of that pleasing excitement, through all the reading world, which was wont to attend the appearance of each new "Waverly novel." The voice of the mighty minstrel again rises, as it were, from the grave, and we cease for a time in the midst of the anxious and feverish contentions of faction, to listen to the tones which delighted and astonished our earlier years. This volume, indeed, unexpectedly possesses all the interest of a new sweep from the lyre which was supposed for ever dumb.—*Dundee Chronicle*.

This is one of the most interesting publications which has for a long time past issued from the press, and will prove, if we judge from the specimen now given, a valuable accession to the literature of the day. The subject is indeed one of great interest, as a memorial of the genius, acquirements, and still more of the domestic habits and general disposition of one of the most illustrious literary characters of this or of any other age; but it derives additional interest from the manner in which it is treated—from the talent and taste, and sound judgment displayed by the editor, Mr. Lockhart. The work is of great value, as giving such full details of the infancy and boyish days of Sir Walter Scott—of the course of his studies—of his habits, and the progress and maturity of his mind; and though last, not least, of that enviable equanimity and serenity of temper which he possessed,—those benevolent dispositions, and that blameless conduct in all the relations of life, which gave so fine a finish of his character; and is so different from others, in behalf of whose genius a sort of dispensation is claimed by their admirers from all ordinary

rules, even that of morality itself. To the taste and judgment, with which the editor has made his selections, the work is indebted for much of its interest; if he has erred on any side, it is certainly not on that of prolixity, either in his extracts from letters or in his own remarks, which are always to the purpose, illustrative of some essential point, and tending either to information or amusement.—*Edinburgh Courant*.

We are certain that this work will obtain for Mr. Lockhart golden opinions from all; and not the less so for the modest place which he constantly assumes to himself throughout its pages. In doing this he has avoided that error of overweening vanity which offends so much in Moore's Life of Byron. Mr. Lockhart's better judgment has made this strictly a biography of his illustrious relative; and we apprehend that he has executed it in such a way as will entitle it to rank in the highest class of this department of literature.—*Kelso Mail*.

The ample means of obtaining authentic materials for the composition of these memoirs, by their author, his acknowledged competence for his task, and above all, the intense interest excited by every thing relative to their illustrious subject, have combined to keep the public for a long time "on the tiptoe of expectation." This feeling is now in progress of being gratified by the appearance of the first volume of the memoirs in question. It has been remarked, that highly raised expectations are never completely realised by the object to which they are directed. In this instance, however, an exception will be found to the general truth of the observation. The Memoirs, so far, at least, as they yet extend, are calculated to gratify the most sanguine anticipations which have been cherished respecting them.—*Liverpool Mercury*.

We congratulate the reading public on the appearance of this work. Mr. Lockhart has performed his task with the judgment and ability which were expected from him; and, in his endeavor to do justice to the character of his illustrious relative, he has increased his own reputation. Of the advantages which he possessed in having access to the best sources of information, and of the communications and the correspondence of the friends of the illustrious poet, he has made a good use; and he has produced a volume of which almost every page teems with interest.—*Manchester Courier*.

THE
A M E R I C A N J O U R N A L
OF THE
M E D I C A L S C I E N C E S.

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VALENTINE MOTT, M. D. *Professor of Pathological and Operative Surgery in the College of Physicians and Surgeons, New York.*

JAMES MAC DONALD, M. D. *Resident Physician to the Bloomingdale Asylum, New York.*

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THOMAS STEWARDSON, M. D. *one of the Physicians to the Pennsylvania Hospital.*

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JOHN WARE, M. D. *Professor of the Theory and Practice of Physic in Harvard University, Boston.*

JOHN C. WARREN, M. D. *Professor of Anatomy and Surgery in Harvard University, Boston.*

EDWARD WARREN, M. D. *of Boston.*

JOHN WATSON, M. D. *of New York.*

THOMAS H. WRIGHT, M. D. *Late Physician to the Baltimore Almshouse Infirmary.*

EDITOR—ISAAC HAYS, M. D., *one of the Surgeons to Wills' Hospital for the Blind and Lame, &c.*

TO READERS AND CORRESPONDENTS.

Dr. EVANS's very interesting paper shall have a place in our next No.

The following works have been received:—

Elements of Medical Jurisprudence. By **THEODORIC ROMEYN BECK, M. D.** Professor of Materia Medica and Medical Jurisprudence, in the College of Physicians and Surgeons of the Western District of the State of New York, and **John B. BECK, M. D.** Professor of Materia Medica and Medical Jurisprudence, in the College of Physicians and Surgeons, New York. Sixth edition. Philadelphia, Thomas Cowperthwait and Co. 1838, 2 vols. 8vo. (From the publishers.)

First Principles of Medicine. By **ARCHIBALD BILLING, M. D. A. M. &c., &c.** Third edition, considerably enlarged and improved. London: 1838. (From the author.)

A treatise on the diseases produced by Onanism, Masturbation, Self-pollution, and other excesses. By **L. DESLANDES, M. D.** Translated from the French, with many additions. Boston: Otis, Broaders and Co., 1838, 12mo. (From the publishers.)

On the Liquefaction and Solidification of Carbonic Acid. By **J. K. MITCHELL, M. D.** (From the author.)

A Case of Osteo-Sarcoma, with remarks, addressed to **VALENTINE MOTT, M. D.** By **Dr. E. H. DIXON.** New York: 1838. (From the author.)

Introductory Address delivered at the opening of the session of the Medical College of Georgia, on the second Monday of November, 1838. By **JOSEPH A. EVE, M. D.,** Professor of Therapeutics and Materia Medica. Published by the Class. Augusta: 1838. (From the author.)

Minutes of the Proceedings of the Medical Society of Tennessee, at the ninth annual meeting, held in Nashville, May, 1838. (From the Society.)

An Appeal to the people of Pennsylvania on the subject of an Asylum for the Insane Poor of the Commonwealth. (From **Dr. Dunglison.**)

Introductory Lecture delivered at the opening of the Albany Medical College, in the Anatomical Theatre, January 2, 1839. By **DAVID MEREDITH REESE, A. M. M. D.** Professor of the Theory and Practice of Physick and Clinical Medicine. Published by request of the Class. Albany: 1839. (From the author.)

Introductory Lecture, delivered at the Willoughby Medical College of the Willoughby University of Lake Erie, 1837-8. By **RALPH GRANGER, Esq.,** President. Painesville: 1837. (From **Prof. S. W. Williams,**)

Catalogue of the Officers and Students of Dartmouth College, September, 1838. Windsor, 1838. (From **S. W. Williams.**)

An Introductory Lecture to a course of lectures on the Theory and Practice of Medicine, in the University of Pennsylvania, delivered at the opening of the session of 1838-9. By **N. CHAPMAN, M. D.** Professor, &c. Philadelphia: 1838. (From the author.)

The Reformation of Medical Science, demanded by the Inductive Philosophy: a discourse delivered before the "New York Physicians' Society," on their

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Anniversary, November 21, 1838. By WILLIAM CHANNING, M. D., New York, 1839. (From the author.)

Transactions of the Medical and Physical Society of Calcutta, vol. viii, pt. 1. Calcutta: 1836. (From the Society.)

The Quarterly Journal of the Calcutta Medical and Physical Society; edited by the secretaries, H. H. GOODEVE M.D., Prof. of Anat. and Med.; W. B. O'SHAUGHNESSY, M.D., Prof. Chem. and Mat. Med. in Med. Col., Calcutta. Nos. 1, 2, 3, 4 and 5. Calcutta: 1837-8. (From the Society.)

The India Journal of Medical and Physical Sciences, from Jan., 1837, to August, 1838. (In exchange.)

Archives Générales de Médecine, Journal complémentaire des Sciences Médicales, June, July, Aug., 1838. (In exchange.)

Revue Médicale Française et Etrangère, Journal des Progres de la Médecine Hippocratique, June, July, 1838. (In exchange.)

Journal de Médecine et de Chirurgie Pratiques. June, July, August, 1838. (In exchange.)

Bulletin Général de Therapeutique Médicale et Chirurgicale. June, July, August, 1838. (In exchange.)

Journal des Connaissances Médico Chirurgicales. July, Aug., 1838. (In exchange.)

Journal des Connaissances Médicales Pratiques et de Pharmacologie. June, July, August, 1838. (In exchange.)

Gazette Médicales de Paris, June, July, August, 1838. (In exchange.)

La Lancette Française, Gazette des Hôpitaux Civils et Militaires. Jan. to August, 1838. (In exchange.)

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The London Medical Gazette: July, August, and Sept., 1838. (In exchange.)

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The American Medical Library and Intelligencer, for Nov. and Dec., 1838, and Jan. 1839. (In exchange.)

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ERRATA.

- Page 18, line 24 from top, for "coats of the aorta," read "*serous, and through the internal lamina of the muscular coat.*"
- " 18, " 2 from bottom, for "February, 1828, p. 81," read "January, 1838, Vol. I. No. 1. N. S."
- " 231, " 9 " " for "caused," read "*cured.*"
- " 274, " 4 " top, for "sprians," read "*sprains.*"

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

ARTICLE I. *Report of the Surgical cases treated at the Pennsylvania Hospital during the months of May, June, July, August, September and October, 1838.* By **GEORGE W. NORRIS, M. D.**, one of the Surgeons to the Hospital.

From the first of May, 1838, to the first of November following, there entered the surgical service of the Pennsylvania Hospital, exclusive of syphilitic diseases, 256 patients.

Of this number 140 were discharged cured; 36 were relieved, removed by friends or eloped; 24 died; and 56 remained under treatment 1st November.

The following list exhibits the diseases and injuries met with, as well as the number of cases of each, which came under notice :

Abscess, - - -	3	Epistaxis, - - -	1
Aneurism, - - -	1	Eruptions, papular, - - -	3
Burn, - - -	6	Fistula in perineo, - - -	2
Bladder, inflamed - - -	1	Fracture of jaw, - - -	1
Cancer of lip, - - -	1	Fracture of cranium, - - -	6
Cancer of mamma, - - -	1	Fracture of spine, - - -	1
Caries of the wrist, - - -	1	Fracture of ribs, - - -	4
Caries of sternum, - - -	1	Fracture of acromion, - - -	1
Cirsocele, - - -	2	Fracture of clavicle, - - -	5
Congestion of brain, - - -	1	Fracture of olecranon, - - -	1
Concussion of brain, - - -	1	Fracture of scapula, - - -	1
Contusions, - - -	19	Fracture of arm, - - -	8
Coxalgia, - - -	1	Fracture of elbow, - - -	1
Dislocations of hip, - - -	2	Fracture of fore-arm, - - -	5
Dislocations of shoulder, - - -	4	Fracture of finger, - - -	1
Compound dislocation of ankle, - - -	1	Fracture of thigh, - - -	7
Dislocation of radius, - - -	1	Fracture of patella, (old) - - -	1

Fracture of leg, simple, -	19	Paronychia, - -	6
Fracture of leg, compound, -	5	Psoriasis, - -	1
Fracture of bones of the foot, -	3	Poisoned by arsenic, - -	2
Compound fracture of knee joint, -	1	Sprians, - -	7
Un-united fracture of arm, -	1	Stone, - -	1
Incomplete fracture of leg, -	1	Tinea capitis, - -	1
Furunculus, - -	1	Testes, enlarged, - -	3
Gangrene of cheek, - -	1	Tonsils, enlarged, - -	1
Hæmorrhoids, - -	1	Ulcers, - -	11
Hæmatocele, - -	1	Ulcers varicose, - -	3
Hernia, - -	2	Ulcers of throat, - -	1
Hernia, strangulated, - -	1	Wounds, incised, - -	11
Herpes, - -	2	Wounds, lacerated, - -	22
Hydrocele, - -	1	Wounds, gun shot, - -	5
Inflammation of arm, - -	4	Eye, diseases of, - -	
Inflammation of leg, - -	4	Conjunctivitis - -	9
Inflammation of knee, - -	3	Ulcers on cornea, - -	6
Inflammation of ankle, - -	1	Cataract, - -	3
Inflammation of glands of the neck, -	1	Iritis, - -	3
Knee, ruptured ligament of, -	1	Fistula lachrymalis, - -	1
Necrosis, - -	2	Fungus hæmatodes of, - -	1
Nose, ulcerated, - -	2	Amaurosis, - -	2
Orchitis, - -	2		

The accompanying table will show the diseases or injuries which terminated fatally; the length of time which the patient survived after admission, and the immediate cause of death.

Disease for which admitted.	Period survived.	Immediate cause of death.
1. Incised wound of face and head,	7 days,	Delirium tremens.
2. Compound fracture of leg,	7 days,	Delirium tremens and mortification of limb.
3. Epistaxis,	4 days.	Delirium tremens.
4. Burn.	Less than 24 hours,	No re-action. Patient æt. 86.
5. Stab in abdomen,	Less than 24 hours,	Internal hæmorrhage.
6. Fracture of cranium,	2 days.	Compression of the brain.
7. Fracture of thigh,*	Less than 24 hours,	Delirium tremens.
8. Fracture of cranium,	39 days.	Abscess of brain and hernia cerebri.
9. Poisoned by arsenic,	Less than 24 hours,	Effects of poison.
10. Fracture os calcis,	4 days.	Delirium tremens and mortification of limb.
11. Congestion of the brain,†	Less than 24 hours,	Congestion of the brain.
12. Comminuted fracture of upper and lower jaws,	4 days,	Effusion on the brain.
13. Compound fracture of leg.	4 days,	Delirium tremens and mortification of limb.
14. Lacerated and fractured legs,	Less than 24 hours,	No re-action.
15. Fractured cranium,	Less than 24 hours,	Compression of the brain.
16. Stone in the bladder,	36 days,	Peritoneal inflammation.
17. Fractured cranium,	4 days,	Compression of the brain.
18. Gangrene of the cheek,‡	5 days,	Gangrene.

* Produced by jumping from a third story window, while labouring under an attack of delirium tremens.

† Picked up in the street in a state of insensibility, and conveyed to the Hospital; probably the combined effect of exposure to the sun and free drinking.

‡ A child æt. 8, following the use of mercury.

Disease for which admitted.	Period survived.	Immediate cause of death.
19. Fractured Spine,	4 days,	Peritoneal inflammation.
20. Contusions,	Less than 24 hours,	Effects of injury.
21. Wounded scalp,	3 days,	Delirium tremens.
22. Gun shot wound of abdomen,	2 days,	Peritoneal inflammation.
23. Burn,	Less than 24 hours,	Burn.
24. Fractured thigh, æt. 80.	84 days.	Exhaustion.

From the above tables it will be seen, that of the surgical diseases treated at the Pennsylvania Hospital, a considerable number are cases of recent injury. Of these, a large proportion consists of fractures of the extremities, and for many years past, dressings of the simplest kind have been made use of in their treatment, with good success. For the thigh the straight position is preferred, and a modification of the apparatus of Desault is that generally employed. The modification consists in the greater length of the outer splint, and the attachment to its lower end of a small block, over a notch in which the extending band passes, in order that the extension be made in a line with the axis of the limb. No short splints or bandages of any sort are applied immediately to the thigh, as they prevent an accurate examination of the state of the fracture, and require that the limb should be disturbed in order to re-apply them. A long narrow bag, stuffed pretty firmly with cotton, and covered with buckskin, is used for the counter extending band, and a double buckskin gaiter, with a thin layer of carded cotton laid over it, or a buckskin band lined with linen, is made use of for extension.

In the treatment of fractures of the leg, as in those of the thigh, no splints or bandages are applied directly to the leg. The limb is placed in a fracture box, upon a well stuffed pillow, previously covered by a thin oil cloth, in such a way as to make the sole of the foot come in contact with the foot board. The fractured bones are then accurately adjusted, and the sides of the box are tied together moderately tight. The foot is securely fastened to the foot-board by means of a strip of bandage, in order to prevent its falling to either side, and the pressure of the pillow is, in the vast majority of cases, quite sufficient to retain the fragments in their natural position. The foot-board of the box is set into its bottom nearly straight, and is made to project beyond the foot, in order to prevent the toes from falling downwards, and thus cause a projection forwards of the upper end of the lower fragment.

Severe inflammation so frequently follows these fractures, in consequence of most of them being accompanied with much contusion, that measures are invariably taken ab initio to lessen its severity. These consist in the application of cooling lotions to the limb, and attention to position, elevating the fracture box or foot of the bedstead. It is to prevent the pillow from becoming wet and unpleasant when the evaporating lotions are applied, that the oil cloth is placed above it. In order to obviate deformity in these fractures when they occur at the lower part of the leg, it is highly important to keep the

foot well forwards, and this is best done by placing under the heel some layers of carded cotton.

At the end of five or six weeks the union is generally sufficiently firm to allow of the removal of the limb from the box, and a bandage and pasteboard splints, made to fit accurately the leg by previously soaking them in warm water, are applied to its sides. On these becoming hard, the patient is permitted to move about.

In very oblique fractures of the leg, where the pressure made by the pillow is not sufficient to prevent the recurrence of deformity after its reduction, permanent extension is kept up by means of Desault's splints, as in fractures of the thigh.

Compound fractures of the leg are much more frequent with us than compound fractures of any other part. When not so severe as to call for immediate amputation, the wound is carefully cleansed, and its sides accurately brought together with strips of adhesive plaster, and covered with lint, after which the limb is placed in a box, as in simple fractures, without bandages or short splints, and cooling applications made to it. If the wound unites by the first intention, which, however, is exceedingly rare, the treatment is continued; and in cases where this does not happen, if the suppuration which follows is moderate in quantity, the same treatment is pursued with the addition of a poultice laid over the part.

During the six months included in this report, seven cases of fracture of the thigh came under treatment, all of which, with one exception, (an old woman of 80,) were treated by the apparatus above mentioned. In two of the cases ulcers about the heel occurred; in one, (a boy,) from the pressure of the extending band; and in the other, from the constant violent efforts made by the patient to drag up his limb, and rid it of the apparatus, during a severe attack of delirium tremens.

Delirium tremens is not an unfrequent attendant upon the cases of recent injury admitted into our wards, and when occurring in connection with a fractured limb, is uniformly attended with much danger to the patient. Of one hundred and forty-three cases of recent injuries treated, twenty-one were attacked with delirium tremens, and several others were threatened with it. Of the twenty-one seized with it, seven died, and fourteen recovered. In the class of cases mentioned, it usually shows itself in less than 36 hours after admission, and from the period of its setting in, little or nothing can be done in the way of treatment for the fracture. We have found the best method of managing a simple fracture of the leg or arm during an attack, to be to remove all dressings from the limb, and envelope it in a pillow. This should be large and well stuffed, and should be bound tightly around the limb by means of a roller. The elasticity of the feathers is such, that no danger of making too much pressure on the part need be entertained, and it will be found to hinder all motion, and to keep the fragments in apposition better than any more complicated apparatus. The treatment which we have found

most successful in cases of delirium tremens, has been the free use of opium in the early stages, grs. ij. or iij., every two hours, together with nourishing soups, and the moderate use of stimuli. The latter are generally given in the form of porter, or tonic and antispasmodic tinctures. In the latter stages of the disease, when the pupil becomes contracted, we either omit, or very considerably diminish, the quantity of opium, and apply large blisters to the back of the head and neck.

Compound fracture of the Tibia and Fibula. Delirium Tremens. Gangrene. Death.—John Anderson, ætā. 39, entered August 10th, for a compound fracture of both bones of the left leg, near the middle, produced by the passage of the wheels of a rail-road car over the part. When admitted he was much prostrated, and had not recovered from the effects of intoxication, in which state he was at the time of the accident. A lacerated wound existed on the inner side of the leg, five inches in length, through which the bones projected, and there was considerable contusion of the whole limb. A small vessel which gave out some blood was taken up, and the sides of the wound were brought together with strips of adhesive plaster, and covered with dry lint; after which the many-tailed bandage was lightly applied, and the limb placed in a good position in a fracture box. On the following day the leg was much swelled, and there was some oozing of dark-coloured blood from the wound, which was not disturbed. Skin clammy; pulse very frequent and feeble. Opium, tinct. valerian, milk punch, and nourishing soups freely.

12th. Slept a part of last night; a good deal of thin bloody discharge from the wound during the night and this morning; pulse has not risen in strength or fulness; is restless, and has tremors and other incipient symptoms of delirium tremens. Fracture box elevated, and the limb with the dressings undisturbed, enveloped in bran. Blister to the back of the neck. Opium and stimuli continued.

13th. Pulse 130 and feeble; delirium continues; numerous vesications, filled with bloody serum upon the leg; knee much swollen, and of a dark-red colour; thigh swollen, of a dusky hue, and painful when pressed upon. A fermenting poultice was applied to the leg, and the thigh was bathed with soap liniment. Mist. Carb. Amm., oil, in addition to former treatment.

14th. Sinking; leg gangrenous. Death at 4 P. M.

The preceding is an example of one of those bad fractures accompanied with great contusion and laceration of the soft parts, which are not unfrequently received at the hospital from some of the neighbouring rail-roads, and will make known the class of patients we are often called upon to treat. The severity of the injury was such, that even had his constitution been good, it might have been doubtful whether efforts to save the limb would have been followed by success. In a patient of Anderson's habits, the pro-

bability of doing so under like circumstances was slight indeed, and amputation would have been proposed, had he at any time been in a condition to have permitted it. Inebriated when admitted, and almost without life, from the severity of the shock given to the system by the accident, the operation was at that time utterly inadmissible, and with all our efforts to stimulate, we could not succeed in bringing him any where near to that state at which it might have been undertaken with any prospect of success.

Fracture of the Os Calcis. Delirium Tremens. Gangrene.—Frederick Burgoin, ætat. 35, was admitted August 2d, at 5 A. M., for an injury of his right leg, which he had received on the previous night, either by falling or jumping from the third story of his dwelling, while in a state of intoxication. Upon examination some swelling and ecchymosis were found to exist about the ankle, particularly over the external malleolus, but there was no fracture of either bone of the leg. A fracture of the os calcis was recognised by the presence of crepitation, but there was no displacement of the fragments, or injury to the other bones of the foot. A small lacerated wound, from which there had been a slight hæmorrhage, existed at the bottom of the heel, but did not communicate with the fracture. The wound was dressed with a strip of adhesive plaster, lint, and a roller moderately tight, and the limb was afterwards placed in a fracture box. The patient had been bled previous to admission, and was stated by his wife to be a free porter drinker, but not an habitual drunkard. His extremities being cold, and pulse very weak, he was stimulated after admission, and the catheter was made use of on account of retention of urine. Some hours after entrance, the roller was loosened in consequence of his complaining of pain in the foot, and opium was administered freely.

3d. Had but little sleep during the night, and was very restless; leg and foot very hot, and is much swelled about the ankle and at the heel; is delirious; pulse about 130, and thready. Limb elevated, and cooling applications made to it. Opium and stimuli, consisting of brandy toddy and mist. carb. ammon. continued.

4th. Delirium continues; profuse sweating; pulse as yesterday; foot and leg hot; parts around the wound in the heel discoloured and crackling on pressure; thin dark-coloured sanies discharged from it. Fermenting poultice to the foot and heel. Carb. ammon., milk punch, essence of beef, opium.

5th. Slept a part of the night; has had sick stomach this morning; pulse 134; the whole of the heel is black and crackling; calf of the leg and foot are of a dark-yellowish colour, and hot; glands of the groin are swollen and painful, and the skin covering them reddened. Bowels have been moved this morning by injection. Tympanitis. Fermenting poultice and stimuli continued; cold to the swelling in the groin.

6th. No sleep. This morning the skin covering both buttocks was found

to be discoloured and crepitating on pressure, evidently gangrenous; thigh and leg hot. Mortified spot of leg has not increased in size; skin of body and upper extremities cool; delirium; head hot; pulse thready; same treatment, with cold cloths to head, and fermenting poultice to buttocks.

7th. Death at 3 P. M.

Examination of the foot showed the os calcis to be fractured in two places in its anterior part; no displacement of the fragments existed: and no injury of the surrounding bones was discovered.

Fractures of the os calcis are not often met with, and are generally produced as in the case just given, by falls from a height upon the foot. The most certain diagnostic mark of this accident, the drawing up of the posterior fragment by the tendo Achillis, was wanting, and the fracture was recognized only by the crepitus which existed. This is the more remarkable, as the patient in his delirium threw the muscles of his leg strongly into action, and can only be explained by supposing the seat of fracture to have been further forwards than is generally the case; or from the fragments having been held together by the aponeurotic covering of the foot. Some of our authorities look upon displacement as a necessary consequence of the accident, and most of them direct the leg to be flexed upon the thigh, and the foot extended upon the leg so as to enable the fractured surfaces to be brought into apposition, and to be retained in this position by means of a curved splint, or the slipper of Petit. The present instance is interesting, as showing that the fracture may exist without any sort of displacement, requiring for its treatment repose of the limb only.

Compound Fracture and Depression of the Cranium. Hernia Cerebri.—Catherine Kittinger, ætat. 37, was admitted July 13th, for an injury of the head. It was stated by the persons, who conveyed her to the hospital, that a short time previous to entrance she had slipped while descending a flight of steps with a bucket of water, and struck her head against the edge of one of them. On examination, a ragged wound about three inches in length was found on the right side near the junction of the temporal and parietal bones. The bone immediately beneath the wound was broken into two or three pieces and driven in upon the brain. She was said to have lost much blood, but when I saw her the bleeding was principally from beneath the depressed bone and was not great. No symptoms of concussion or compression of the brain existed. No paralysis. An attempt was at once made to raise the depressed portions of bone by means of the elevator, but these were so firmly jammed in as to make it impossible until after the application of a small trephine. A perforation was made with this on the upper part of the exposed sound bone, after which, the portions driven in upon the brain were readily removed. The dura mater was found to be slightly wounded and a branch of the middle artery was divided. There was no effusion of blood between the dura mater and bone, and on raising

the latter the hæmorrhage almost ceased. A small strip of lint was placed over the divided vessel and the wound was lightly covered. The pulse rose and the patient, through an interpreter, stated her pain to be less after the removal of the bone. Perfect quiet; absolute diet; cold to head.

14th. Is without fever or pain in the head; slept well; pulse moderate; pupils natural; states herself to be four months gone with child.

16th. No pain in the head; pulse not excited; slight erysipelatous swelling of the scalp around. Simple dressings to wound; diet and cold to head continued.

17th. She was purged with calomel.

19th. The erysipelatous appearance had disappeared and she continued doing well till night, when she was observed to wander in her mind.

20th. She complained of soreness of the wound, which, however, looked well and discharged healthy pus. Skin pleasant; some heat of head; pulse moderate both in force and frequency; pupils natural; tongue clean; is correct in her replies to questions; simple dressings and cold to the head continued; towards evening she had a return of her delirium and a twisting of the mouth and tongue to the left side was observed. Emp. vesicat. to back of the neck; injection.

21st. Delirium continues but is not violent; rested badly; twisting of mouth and tongue continues but has not much increased; cannot raise up her left arm from the bed or seize anything with her hand; no paralysis of lower limb; calomel in small and repeated doses, combined afterwards with minute portions of opium, in order to prevent its operation upon the bowels.

23d. She continued in the same state as on the 21st; the blister on the back of the neck not being very sore a second was applied extending up upon the head.

25th. Yesterday and to-day patient has been much better; twisting of the mouth is scarcely perceptible; is free from delirium and pain; gums slightly sore; has partially regained the use of her arm, being able to raise it from her bed and to move slightly the fingers; wound looks well and is closing rapidly. Dressings of simple cerate continued, and nit. argent. applied to the edges of the wound; calomel and cold to head omitted; bowels freely moved.

August 1st. Since the last date the patient continued steadily improving; yesterday a slight degree of puffiness or elevation at the wounded part was observed, which has to-day increased; pulsation at that part is also stronger; has to-day less power over the left arm than on the 25th; is exceedingly feeble; takes freely of mucilaginous articles of diet and milk; pressure, just sufficient to give that degree of support to the part which it should naturally receive from the dura mater and bone, to be made with an adhesive strip.

4th. The swelling and pulsation at the wounded part continue the same; is free from delirium though more dull; paralysis of left upper extremity has been again gradually increasing; perfect command over lower extremity tongue clean; appetite good and she complains of her debility; pulse very

feeble; within the last two days has at times passed her urine involuntarily; soreness of the wound, but no pain in the head. Bowels freely opened by injection; milk, gruel, and weak broth.

9th. No change since the 4th, except that the swelling on the side of the head has much increased in size since yesterday; it now presents the appearance of a rounded pulsating tumour, elastic to the touch, about the size of a black walnut; no fever, and is correct in her answers. Wound continues to be dressed with lint spread with cerate and the adhesive strip.

12th. The tumour is to-day softer and there is a much more free discharge of healthy looking pus from between the side of it and the scalp than there has heretofore been. A small piece of the intercal table of the bone was observed working out at the back part of the tumour and was removed; is free from stupor though dull; urinates in bed without giving notice of it; demands food; paralysis of arm complete and is unable to draw up the left lower limb though she can move it slightly; bowels moved by injection.

16th. The tumor has been gradually increasing in size since last report and is now fully of the size of an egg; no other change except that she sleeps more; is dull but not delirious; pupils natural; appetite good; to-day for the first time complete paralysis of the left lower limb was observed. Treatment continued.

17th. She lay during most of the day breathing hard and almost insensible; right pupil more dilated than the left; both insensible to light; during the night she revived a little and continued without change during the 18th.

19th. Pulse 152 and breathing very hurried; sleeps deeply but can be roused; right pupil continues more dilated than that of the left side; complete paralysis of the left side continues; the tumor has gone on increasing slowly and was judged to be nearly the size of a small orange; at its top a small discoloured pulpy spot is visible, which is evidently the commencement of sloughing. From this period she lingered on till 3 A. M. of the 21st, when she died. I was not present at the autopsy, but examined the fungus mass on the following day, after it had been hardened by immersion in spirits. It took its origin in the cerebrum which it resembled in consistence and appearance, and was protruded through the opening in the dura mater which had been observed after raising the fractured portions of bone. A large and deep abscess existed in the cerebrum at the side of the tumour and nearly the whole of that side of the brain was disorganized.

Fracture of the Cranium, Recovery.—William Wagner, ætat. 23, entered July 29th, 1838. A short time previous to admission he had been knocked down by an axe falling from the top of a three storied house and striking him upon the head. Upon examination, a cut, four inches long, was found to exist on the top of the head over the left parietal bone, accompanied by a fracture in that bone to the extent of two and a half or three inches. There was no splintering or depression of the bone. The patient had been stunned

by the blow, but soon recovered, and the scalp bled freely; pupils natural; pulse 64 and weak. After shaving the head the sides of the wound were drawn together by adhesive strips and dry lint, and a bandage applied; absolute diet; a few hours after entrance, when reaction was fairly established, he was bled twice, to the amount of about 3xxxv., and had ice applied to his head; calomel grs. xij. at bed time.

30th. Passed a good night, and is without pain; pulse 80 and moderately full; calomel has operated freely. Cold to head to be continued, and mixt. neutral with a small portion of antim. tartar. administered; in the evening he was again bled 3xij., and took a purge of calomel and extr. colocynth comp.

31st. Pulse 84 and soft; skin moist; no pain in the head. The bandage on the head was renewed, but the strips on the wound, which has not united, were not disturbed; treatment continued.

August 1st. Bowels were very freely moved last evening; pulse above 90; skin warm; tongue clean; no pain in the head; gums slightly affected by the calomel. V. S. 3xiv., and other treatment continued.

2d. Pulse 82; skin moist; no pain in the head or soreness about the wound; salivation in a much greater degree than yesterday. Same diet and treatment continued, with the addition of an astringent wash for the mouth.

5th. Pulse 82; no heat of skin or pain in the head; was freely purged yesterday with salts and magnesia; sleep last night was much disturbed by dreams; no delirium; no swelling of the scalp or inflammation around the wound which is suppurating freely. Soft poultice to the head and other treatment continued.

7th. Skin warm and rather dry; some delirium during the night; head hotter; some hæmorrhage from the wound last night in consequence of which the poultice was removed for the time and dry lint applied to it; two dozen leeches to each temple; cold to head; mist. neutral with tartar emetic continued.

8th. Had a good night; no delirium; no fever; to-day there was a free discharge of fetid pus and a portion of dead tendinous matter was thrown off from the wound, leaving a large portion of bone bare at the bottom of the wound. Poultice to head and other treatment continued.

Two days after the last report, leeches were again applied to his temples, after which he went on doing well. On the 1st September, I removed two pieces of bone, which had become loose, from the wound, one an inch in length consisted of the outer table of the bone only, the other somewhat larger was of both tables. Support was given to the brain after the removal of the bone, by means of lint and an adhesive strap. From this date the wound went on cicatrizing slowly, its edges being occasionally touched with the nit. argent. On the 22d, two more small pieces of bone were taken away, and by the 21st of November cicatrization was nearly perfect, and the patient returned home.

Ununited Fracture of the Humerus. Application of Caustic to the Ends of the Bone. Cure.—Charles Southwick, ætat. 28, was placed under my care by Dr. J. Rhea Barton, for the cure of an ununited fracture of the humerus, and was brought into the hospital on the 5th of May. He states that in March, 1834, he slipped from the top of a wagon loaded with straw, one of the wheels of which passed over his left arm and produced a simple fracture in its lower third. The arm was dressed by a surgeon in the usual manner and no union taking place the splints were continued for nearly seven months. In May, 1835, he came to Philadelphia for advice, and remained four or five months under the care of two respectable practitioners. The treatment pursued by these gentlemen consisted in rubbing the ends of the bone one against the other. This was repeatedly done at regular intervals, the fractured ends being afterwards carefully placed in apposition by means of splints and a bandage. Under this treatment the fracture became more firm, though some motion always remained at the part. Six months after his return to Bordentown he was able to carry a small bucket of water for a short distance without much inconvenience, but was never able to pursue any laborious occupation. In March, 1838, he fell upon the arm, since which time the motion at the point of fracture has increased, and he has been unable to make any use of it.

Upon examination, the fracture was found oblique, the lower end being one and a half inches above the internal condyle, while the upper extremity of it was nearly three inches above that of the outer side. The fragments of the bone overlapped, causing some deformity; very little thickening of the parts about the fracture existed; moving the new joint, even roughly, caused no pain, and it was so very loose as to render the limb perfectly useless to him. The elbow joint was uninjured and its motions perfect. The muscles of the shoulder, arm, and fore-arm, were much wasted. The patient had always enjoyed and was at the time of coming to us in good health, and entered the hospital with the view of submitting to any treatment which would afford a probability of restoring his arm to usefulness.

In consultation it was thought, that, putting out of view the numerous cases in which the seton had failed in cases of very long standing, the close proximity of the fracture to the joint, and the risk there would be of wounding the ulnar nerve and artery by passing a seton between the fragments precluded in this instance the trial of this mode of cure, and it was determined to cut down upon the part and apply the caustic potash to the extremities of the bone.

This was done on the 16th, four years and two months after the receipt of the accident. An incision on the outer part of the arm three inches long anterior to the triceps muscle, and commencing a short distance above the internal condyle was made so as to expose fairly the seat of fracture. Two small vessels in the dense structure around the seat of injury were divided by this, and bled freely; these were secured by ligature and the thickened

cellular substance connecting the two extremities of the bone was then cut through and the wound carefully dried, after which a stick of caustic potash was freely rubbed over them *until a black eschar was formed*. The ends of the bone were in close apposition at the inner side of the arm, but were found to be separated about a fourth of an inch at the external part over which the incision was made, and were perfectly rough. The wound was then tightly filled with lint, and put at perfect rest by means of a rectangular splint applied to the inside of the arm.

The day following the operation, the patient complained of pain in the limb, caused by the tightness of the bandage, which together with the splint was removed, and the arm placed in a carved splint with a poultice over the dressing. After this change the arm became easy. On the 19th the lint had become perfectly loose and was removed from the wound. No redness of skin or swelling about the wound; some soreness but no pain; wound black at bottom; red at edges; slight discharge from wound.

20th. Arm more sore; slight redness of skin about the edges of the cut; discharge not large; both ligatures were seen to be lying loose and were removed; no swelling; poultice continued.

21st. Hæmorrhage from the wound last night to the amount of ℥iv. or ℥v. ; the part was carefully examined but no vessel was to be seen; to-day it is perfectly clean with red healthy granulations at its bottom, and in every respect looks well; wound tightly covered with dry lint, with very moderate pressure upon it and the poultice omitted; carved splint continued, and gtt. xxx. tinct. opii in the evening. At 8 p. m. there was a renewal of the hæmorrhage to the extent it was judged of ℥xij. or ℥xv. The dressings were removed and the wound carefully sponged out, when a small vessel situated immediately below the skin was seen to give out blood and was secured by ligature. Very accurate examination made known no other bleeding vessel, but there was a general and rapid oozing from the whole surface of the cut; the wound was then filled accurately and closely with layers of dry lint, after which a bandage was applied from the hand upwards, making firm pressure on the part and perfect rest secured to the limb by applying a rectangular splint to its inner side; laudanum gtt. lx. to be repeated every three hours if no sleep.

22d. Took one dose of laudanum; passed a good night; no pain in the arm; bandage over wound is very slightly discoloured by the oozing from the wound. Perfect quiet enjoined with a diet of gruel, laudanum to be repeated at night.

25th. At 11 a. m. the bandage was carefully cut off as low as the elbow, in order to make an exit for the pus which was in large quantity and extremely fetid, the skin around the incision was slightly reddened. The lint with which it was stuffed was not disturbed, but a compress of fresh lint was laid over the part, and the arm again secured to the splint by means of the many tailed bandage. At half past 2 p. m. there was a recurrence of

hæmorrhage which was arrested by dry lint and pressure. In the evening the hæmorrhage again returned to such an extent as to require the application of the tourniquet to restrain it; the dressings were now all removed as well as the lint with which the wound was stuffed. The wound itself presented no appearance of sloughing. On loosening the tourniquet, a general oozing of blood from the bottom and sides of the wound occurred, but, with the exception of two small ones near the surface, no vessels could be discovered pouring out blood. The ends of the bone were still rough and not covered by granulations; the vessels were secured by ligature, and pure kreosote was applied freely to the whole surface of the wound by means of a camel's hair pencil; the kreosote appeared at once to constrict powerfully the vessels of the whole surface of the wound and caused a cessation of all oozing from it; the wound was then firmly filled with dry lint and moderately strong pressure made over the part by means of a roller, the arm being again placed upon a splint. Opium gr. i., every six hours.

June 2d. Since last report has continued doing well; the bandages having been daily clipped a little for the purpose of making a free exit for the pus, which is of good quality and discharged in large quantities. No pain; no return of hæmorrhage.

8th. Portions of lint with which the wound was filled have been daily removed, and to-day the last of it was taken away. Wound looks well and discharges thick healthy pus; the ends of the bone are completely covered by granulations. Very little inflammation around the wound; general symptoms good; bowels regular. Simple dressing; splint continued.

23d. Allowed to move about; sides of the wound have been for some time past drawn together with adhesive plaster and the granulations repressed by means of the nitras argent. The point of fracture was to-day carefully examined and the ends of the bone found to be still moveable.

July 12th. Wound entirely cicatrised. Within the last ten or twelve days the fracture has become much firmer. Bandage to arm, and from the hand up, and angular board splint to its inner side continued.

21st. The fracture daily becoming firmer, he left the hospital and returned to his family at Bordentown, the arm being still splinted.

After this date he came to the hospital weekly for the purpose of having his arm examined and dressed. His general health which had suffered slightly during his residence there improved after his return to the country, and by the 25th of August the union had become perfectly firm and the splints were omitted. On the 21st of November he last presented himself. At this time he had recovered in a great measure the use of his elbow and fingers which had become stiff during the treatment. The humerus continued firm; was perfectly straight and the limb was daily becoming stronger and more useful.

The different methods of cure for artificial joint have all at different times been much vaunted by practitioners, and as might be expected, have all in

some instances been followed by failure. The most ancient and simplest mode of treatment for such cases, that of rubbing together the ends of the bone, had in Southwick's case failed, though carefully and perseveringly pursued during a period of some months. The next most simple plan of procedure to this, is assuredly that of passing a seton between the fragments; but besides that, this could not have been safely ventured on in the case just given, on account of the close proximity of the ulnar artery and nerve to the seat of fracture: examination of the records of surgery show, that this method has often entirely failed in those instances in which the bone has been for years disunited. In these latter cases, excision of the ends of the bone, and the application of caustic after free exposure of it, are the means most to be relied upon. The first of these, besides being a much more formidable operation, and productive of more pain and danger than the latter, would have been in the highest degree difficult, if not altogether impossible, in the case before us, from the nearness of the false joint to the elbow. The application of caustic potash to the extremities of the fracture in the manner detailed, was, so far as I am aware of, first used by Mr. Cline, of London. Mr. Earle afterwards, in 1821, made use of it in two instances, though without success; one of these was in a case of ten months' standing, in which the seton had previously failed. After the application of the caustic, callus was deposited, and the limb became much stronger, but this was afterwards absorbed. The fracture in his second case (produced by the lifting of a tea-pot) was of nine years' standing, and occurred in a patient "worn out with mercury," in whom nearly every cylindrical bone in the body was diseased; a case evidently unfitted for any operation. The caustic has been successfully used in three or four cases by Dr. J. R. Barton, of this city, in one of which, (following a compound fracture of the leg, of 16 or 18 months standing,) Dr. Physick himself discouraged the employment of the seton from fear of its failure. It was at Dr. Barton's suggestion that I made use of it with Southwick, and from the ease with which the operation can be done, the little pain attendant upon it, and the almost certainty of producing by it a degree of action in the parts sufficient to excite a deposit of callus, without at the same time keeping up that action so long as to cause excessive suppuration, which often leads to failure, I am induced to prefer it to excision of the ends of the bone, and would recommend it in those cases which are rebellious to the simpler modes of treatment. The several hæmorrhages to which Southwick was exposed during his treatment, cannot in any way be urged against the method. The bleeding was not the consequence of the division of any vessel by the direct application of the caustic, or separation of sloughs formed by it, but consisted in a general oozing from the surface of a granulating wound. Every practical surgeon must have witnessed the peculiar tendency to these secondary losses of blood in particular constitutions, and the same state of things which happened in this instance after the application of the caustic,

would most probably have occurred had a simple incision been made for a removal of the ends of the bone. The powerful effect in arresting the oozing of blood from the granulations, by the application of pure kreosote, is worthy of note; its action was immediate, and not productive of pain. It may perhaps be well to state, that neither in the cases reported by Mr. Earle, nor in those of Dr. Barton, did any hæmorrhage occur, and since Southwick's case, I assisted Dr. Harris in the performance of a similar operation on the humerus, in which none had place.

Compound Fracture of the Femur. Firm union after three and a half months. Necrosis of upper fragment. Removal of the sequestrum 6 inches in length, at the end of 15 months.—William Pearce, seaman, ætat. 21, was admitted on the 13th of June, 1837, for a compound fracture of the left femur, near its middle, produced three days previously by a fall from the upper rigging of a ship upon the deck. The wound was at the outer part of the limb, and the upper fragment projected.

Upon his first coming into the house, his limb was placed in a good position, in a long fracture box, and dry bran applied in such a way as completely to surround and envelope it. This was used with the view of effectually absorbing the discharge which was great, at the same time that it kept up a moderate and equable degree of pressure, and could be removed with the aid of a spatula or syringe, and re-applied without causing pain or disturbing in any degree the limb.

On the 19th of July, the discharge having much diminished, the bran was dispensed with, and the limb was placed in the box upon a pillow, with a poultice to the wound. His sufferings at this period were extreme; appetite not good; heavy night sweats; pulse ranging from 90 to 100; tongue clean; no diarrhœa: the limb was much swelled about the wound, which looked healthy, the granulations being florid and secreting pus of a good quality. Opium, with tonics and a nourishing diet, was freely given.

August 12th.—General symptoms have much improved; no sort of union has taken place, and there is great lateral projection of the upper fragment of the bone, with a considerable discharge of pus; he bears better the dressing of his limb, his sufferings having much abated. To-day the fracture box was exchanged for Hartshorne's modification of Boyer's apparatus for fracture of the femur, in order that moderate extension might be made. The many-tailed bandage being first applied above and below the seat of fracture, with the view of preventing the pus from travelling. The apparatus employed was chosen on account of the facility of dressing which it allowed, it being so constructed that the outer splint may be removed, and the dressings re-applied, without in any way disturbing the extension which is kept up.

October 1st.—Thigh much improved, being less swelled and straighter; union is now perfectly firm, the limb being three inches shorter than that of the right side; wound has become closed, with the exception of a small fis-

tulous opening, through which a piece of bone can be felt, deprived of periosteum, which gives a hollow sound when knocked against, and is apparently of considerable length; sufferings slight in comparison to what they have previously been, and general health greatly improved. Splint is to-day laid aside, and the limb again placed in a fracture box.

On the 18th of October an incision was made over the point of fracture for the purpose of removing the necrosed bone, but upon laying bare the part it was discovered, that, though free and loose at its lower end and sides, it was still firmly adherent at its upper part. Under these circumstances it was thought best not to remove any part of it, but to leave it as a handle, whereby the whole portion might be hereafter taken away; very little inflammation followed the operation.

On again taking charge of the wards in May, 1838, I found Pearce still in the house, much improved in general health. The opening on the outside of his thigh still existed, and the bone could be felt rough for some inches above the point of injury, but was not moveable. In the latter part of July it became loose, but owing to its being closely surrounded by new bone, it could not be taken away by the forceps. On the 15th of September an incision four inches long was made on the outer part of the thigh, over the necrosed bone, and the parts on either side dissected to a small extent, so as to expose the new shell of bone which had been formed, as well as the necrosed part so far as uncovered. Portions of the new shell, which was thick and very dense, were now successively cut away with Hey's saw, a chisel and trephine, after which the dead piece was removed with the aid of a strong forceps. The portion removed was six and a half inches in length, and embraced the whole shaft of the bone. The cavity was stuffed with lint, and the sides of the incision drawn slightly together with adhesive strips. By the 17th the wound was suppurating kindly, and the lint was removed. When I left him, Nov. 1st, the cavity was gradually filling up; general health was improved; the thigh had become straighter and presented a more natural appearance.

Fracture of both Bones of the Leg. Delirium Tremens. Sloughing. Amputation. Cure.—Isaac Wheter, an intemperate weaver, ætat. 40, entered September 14th, for a compound fracture of the right leg. The fracture which was occasioned while the patient was intoxicated, by a dog seizing hold of his leg and causing him to fall, was very oblique and situated about two inches above the ankle. Two or three small lacerated wounds existed around the seat of fracture occasioned by the teeth of the dog, and considerable oozing of blood occurred. The limb was placed in a fracture box and enveloped in bran; tinct. valerian and an assafoetida mixture with laudanum was directed for him, with nourishing soups and gruels for diet. On the 15th, the leg was red and hot and cold applications were made to it. On the 17th, vesications filled with bloody serum existed about the seat of injury, and the patient

was restless; had tremors and was watchful. His medicines were continued and an increased quantity of laudanum was given to him without, however, producing sleep.

18th. Has been highly delirious all night and continues so this morning, dragging his leg up and throwing it about violently; limb very red and tense. Treatment continued with the addition of milk punch and a large blister to the back of the neck; towards night the pupils became more contracted and the opium was omitted.

19th. Blister has drawn well and his pupils are less contracted; has had no sleep, and makes constant efforts to drag his leg from the apparatus in which it is confined. Tinct. opii. gtt. lxxv. were now given him every two hours and another larger blister applied to the back of the head; milk punch and soups continued. On the nights of the 19th and 20th the patient slept, and by the 21st was perfectly tranquil and free from delirium; the whole leg was now ecchymosed from the knee downwards, greatly swelled about the ankle, red and hot. It was gently and repeatedly bathed with soap liniment and an evaporating lotion applied to the ankle. A large collection of matter was afterwards discharged from the point of fracture, and the soft parts around sloughed. He was now put upon a generous diet with porter and the free use of quinine. In the early days of October the discharge of pus increased in quantity, and the patient's appetite began to fail; he had, moreover, night sweats, repeated chills and a tendency to diarrhoea. Amputation was now recommended to him after a consultation, and was done on the 6th; the circular operation at the place of election was performed and the sides of the stump were brought together obliquely. On examination of the limb after its removal, a small fragment of the tibia was found to be completely separated from the under part of the upper fragment, and a longitudinal fissure existed in the lower fragment, extending from the point of fracture down to the joint; the fibula was also found to be fractured at its extreme end and in its upper part, as well as on a level with the injury of the tibia. The patient bore the operation well. His general health improved after it, and at the time of my relinquishing the wards, the wound had nearly cicatrized.

Compound Fracture and Dislocation of the Foot. Immediate Amputation. Cure.—Peter M'Ghegan, ætat. 66, was brought in from the Columbia rail road on the morning of the 22d of October, in consequence of a compound fracture and dislocation of the left ankle, with great laceration of the soft parts; produced by a car passing over the limb. The foot was almost separated from the leg and the lower part of the latter was greatly lacerated, the integument being torn up as high as the calf. A short period after his admission, reaction having fairly come on, amputation below the knee was performed, (circular,) and the wound dressed to heal by the first intention. For the first ten days after the operation the stump did not present a very favourable appearance, the skin being reddened and a large discharge of

thin, dark-coloured and fetid pus occurring from it; at the end of this time, however, the inflammation diminished and the discharge lessened, and he ultimately did well.

Lacerated Wound of the Hand and Wrist. Sloughing. Amputation.—Samuel Jackson, *ætat.* 39, was admitted on the evening of August 14th. He was an attendant upon a steam drug mill and received his accident by having his hand dragged in between two heavy rollers. On the ensuing morning the limb presented the following appearances:—A longitudinal wound on the back of the fore-arm, about five inches in length, with the integuments on either side detached from the muscles beneath to a slight extent; the soft parts of the palm of the hand much lacerated; the flexor tendons being exposed, and the first and second metacarpal bones separated for some distance; the skin slightly torn up from the thumb and fore-finger, and the phalanges of the ring and middle fingers comminuted; no fracture of the bones of the fore-arm or metacarpal bones; the whole fore-arm as high as the elbow much swollen; the skin about the wrist of a dusky red colour with vesications upon it; a good deal of blood was stated to have been lost previous to his entrance, but a'l hæmorrhage ceased after the application of adhesive strips and lint to the parts. The patient was strictly temperate in his habits, and after a consultation it was determined to amputate the middle and ring fingers, and make an effort to save the hand. This was at once done, and the wounds were afterwards again done up with adhesive plaster, dry lint, and a splint, placed upon a pillow and slightly elevated, with lead water applied to the upper part of the arm.

Under this treatment things went on well for a day or two. After this period profuse suppuration took place, and the integuments of the palm of the hand and those surrounding the wrist to a considerable extent sloughed. A poultice was applied to the part till after the separation of the sloughs, when the bran dressing was employed and a nourishing diet and porter, together with the free use of opium and quinine. For some time even after the separation of the sloughs the ulcerated surface presented a healthy florid aspect, and the discharge of pus diminished; but, ultimately, large collections of matter formed beneath the skin on the under part of the arm, extending up above the elbow, as well as over the metacarpal bones of the hand which communicated with the wrist-joint. The patient now suffered from hectic, and had become emaciated and much debilitated. His appetite too began to fail; pulse frequent and feeble; no diarrhoea. As he had now evidently begun to sink under the irritative fever, it was determined in consultation to amputate above the elbow.

On the 12th of September the arm was removed below the insertion of the deltoid, by the circular operation; three ligatures were applied and union by the first intention attempted. His health improved rapidly after

the operation. On the 21st, the ligature of the humeral artery came away, and on the 31st of October he was discharged.

Rupture of the External Lateral Ligament of the Knee. Cure.—Jno. Divine, labourer, ætat. 20, admitted May 31st. A short time before admission a bank of earth had fallen in upon him while at work, striking the outer part of his right knee, and carrying his leg forcibly inwards. The pain at the time of the accident was severe, and all power of motion was at once lost. Upon admission he complained altogether of his knee, which was slightly swollen. The heads of the femur and tibia could be distinctly traced, and, as well as the patella, were uninjured. Upon raising the limb and holding firmly the lower end of the femur, the leg could be pushed considerably inwards, and a separation between the extremities of the femur and tibia at the outer side of the joint was very evident, which disappeared upon the force applied to the leg being discontinued. No shortening of the limb or crepitus existed, but great pain was caused by the least motion of the part.

In order to preserve the part in a state of perfect rest, the limb was placed in a long fracture box, and under the use of cold applications, followed by leeches to the knee, the pain abated, and the swelling in a few days disappeared. Towards the middle of July it was found that there was still an undue degree of lateral motion at the outer side of the knee, and with a view to hasten the deposit of new matter from the vessels, a blister was applied over this part. Some improvement followed this, and a second and a third application of the remedy was made at short intervals of time, with decided benefit. In the latter part of August he was suffered to move about, a soap plaster and a roller being applied, in order to give some support to the knee, and on the 15th of September he was discharged cured.

Oblique Fracture of the Head of the Tibia. Severe Inflammation. Cure. John Beatty, ætat. 23, entered July 15th, for an injury which he had received the day previous, by a bank of earth falling upon him, while erect. After the accident he was unable to rise or make any use of his limbs, and a physician in the country who saw him, applied a bandage and splint to the limb, after which he was sent to the hospital. a distance of 20 miles. On admission he was suffering great pain, and the bandage and splint were at once removed. The whole limb as high as the groin, was much swollen, red and very hot. The knee joint was distended, and the slightest handling of the parts about it produced great suffering. The limb was elevated in a long fracture box, and cooling lotions applied to it, and the patient, who was robust and of a good constitution, was bled to fainting. Leeches were afterwards twice freely applied around the knee, and he was purged, the cold applications being continued. By the 23d the inflammation had subsided, though some swelling still existed at the knee; examination now showed a

good deal of unnatural motion about the joint, and on close inspection the tibia was found to be fractured obliquely through its head. The treatment was continued with the pillow and fracture box, till August 26th, when, the limb appearing perfectly strong, the box was omitted and a bandage applied, and on the 15th of September he was discharged cured.

The bad effects arising from the early application of tight bandages to fractured limbs are not unfrequently witnessed in our wards, in patients arriving from the country. The practitioner at a distance, in these cases, in order to render the patient more easy during his ride to the city, dresses the limb, and mostly in order to make the apparatus perfectly secure, applies his bandages somewhat tightly, without taking into account the length of time which must elapse before the patient can arrive at the hospital, and the swelling which will occur after such accidents, particularly when the seat of fracture is in the neighbourhood of a joint. The pain caused by this, added to the motion during the journey, soon gives rise, as in the case just noted, to swelling and inflammation, which sometimes adds greatly to the danger of the patient, and always gives rise to much suffering. Several times I have seen sloughing occur in such cases; and in one instance, although the bandage had been applied for less than 24 hours, and was removed immediately upon entrance, mortification of the limb very soon followed, and necessitated its amputation. During the present term several examples of intense inflammation and suffering, arising from this cause, were presented to our notice. In a case of simple fracture of the leg a short distance above the ankle, received twenty-four hours after the occurrence of the accident, from one of the adjoining counties, a tight bandage applied to the leg from the toes upwards, and reversed over short splints, caused a high degree of inflammation, and extensive vesication of the whole limb. The habits of this patient were not very temperate, and I am inclined to think that the severe pain arising from his inflamed limb, by altogether preventing sleep, aided considerably in bringing on an attack of delirium tremens, from which he narrowly escaped with his life. The injurious effects of tight bandaging were presented in another patient, with a simple fracture of the middle of the fore-arm, sent in from the outskirts of the city; a smoothly applied bandage and long splints had been put on immediately after the accident *tightly*, and so great was the inflammation produced, that for some days after his admission it was found necessary to omit all dressings, and confine the patient to his bed, with the arm extended on a pillow, and apply cooling lotions to the part. When fractures are seated in the neighbourhood of joints, and in all cases in which fractures of an extremity occur in the country, in such situations as will prevent it from being frequently visited, it is better to omit the application of a bandage directly to the part at the first dressings, and simply give support to the limb by long splints, well padded with cotton, attached to the member by means of a roller moderately tight. In cases in which dressings are required temporarily, until the patient can arrive at an

infirmary, an excellent plan for the lower limb is to envelope it in a well-stuffed pillow, and secure it with splints on the sides by means of a roller. The elasticity of this will permit swelling to occur without producing pain, at the same time that it will give sufficient support to the part to prevent motion or displacement of the fragments.

The continued application of cold has been used with benefit in several cases of lacerated wounds. The following was the mode of application: The pillow upon which the injured part is placed being properly protected by oiled silk, and the wound covered with lint; and, if necessary, the sides of it drawn together with adhesive plaster, one end of a long strip of lint is placed in a basin of cold water fixed on a table near to and above the level of the part, while the other end is attached to the lint laid over the wound. This, acting upon the principle of a syphon, keeps up a continuous irrigation of the parts, the water being carried off by causing another strip to connect the dressings with an empty basin placed upon the floor. The continuous application of cold in the manner described, has of late been particularly recommended in this class of wounds, by MM. Josse, of Amiens, and Berard, and in hot weather will be found an agreeable and very effectual means of preventing a too high degree of inflammation and its consequence, excessive suppuration.

Lacerated Wound of the Hand and Wrist. Application of Cold by means of the Syphon. Cure with the loss of the thumb.—Richard Lancaster, a coloured boy, ætat. 14, was admitted at 9 P. M. of August 22d, for an injury of his left hand, received some hours previously by the bursting of a gun. The soft parts of the palm were torn up, and the flexor tendons below laid bare; the integuments over the inner side of the wrist were much lacerated, and the radial artery exposed for some distance. The thumb was shattered and hanging by a few shreds of tendinous matter only, to the wrist. No fracture of the bones of the hand or fore-arm existed, and the wrist joint was not opened except at the articulation of the thumb. A ligature was placed on the radial artery, and the thumb was removed at its junction with the wrist: the sides of the wound were brought together and covered by lint, after which the hand was laid out upon a splint, and leadwater applied by means of a syphon. The first day or two after the accident the patient had slight fever, and was put upon the use of the effervescing draught. On the 28th the lint and adhesive strips were removed, and the cold application discontinued; some dead tendinous matter was thrown off, and a moderate discharge of pus occurred from the ulcerated surface, as well as from a small abscess on the back of the hand on the succeeding days, after which the granulations presented a healthy florid appearance, the bran dressing being made use of. On the 17th of September the ligature came away, and the wound was dressed with basilicon. By the 31st October cicatrisation was perfect, and the patient was dismissed.

Lacerated Wound of the Hand from Gun Shot. Cure.—John Frowart, ætat. 18, entered September 9th, for a lacerated wound of the right hand, produced by the contents of a gun loaded with shot passing through it, the hand having been held over the muzzle. The accident had happened an hour or two before entrance, but the hæmorrhage had not been great. The soft parts of the palm were extensively torn up, and the metacarpal bones of the middle and ring fingers were completely separated. The integuments of the back of the hand were lacerated to the same extent as those of the palm. No fracture existed. The wound was dressed with adhesive strips, and lint, after which the hand was placed on a splint, elevated, and cold leadwater applied to it by means of the syphon. On the 15th the cold lotions were omitted, and a poultice applied; but little swelling of the hand or fore-arm existed; the wound was suppurating kindly and free from pain; general symptoms good. On the 17th the bran dressing was made use of; a short time afterwards this was thrown aside, and basilicon and simple dressings employed; cicatrisation proceeded slowly, and on the 9th November he was discharged cured.

Besides the two cases above given, the continuous application of cold was used with advantage in the following among other instances: A case of very severe contusion of the foot, accompanied with a lacerated wound of the inner side of it, produced by the part being jammed between two rail road cars. Two cases of compound fracture of the great toe, both accompanied with much contusion of the parts. A case of severely lacerated hand from gun shot, in a child ætat. 7.

Fracture of the Neck of the Scapula. Cure.—Horatio Singleton, ætat. 21, was admitted, October 27th, in consequence of a fall from the fourth story of a house. The force of the fall had been received upon the left side; the hip and thigh of which were contused. His principal injury, however, was at the shoulder of that side, which was much swollen, and there was an inability to move the arm. The clavicle and spine of the scapula were uninjured; the shoulder was thrown forwards so much as to give at first sight the appearance of a luxation forwards of the head of the humerus, but upon taking hold of the arm the motions of the articulation were found to be perfect, showing that the humerus had not left the glenoid cavity; the humerus too could be traced in its whole extent and was not fractured; upon rotating the arm or pushing backwards the shoulder, the trunk being firmly supported, crepitus was very evident, and the deformity could be made to disappear, but immediately that the force was dispensed with it returned. From the existence of the above symptoms the injury was judged to be fracture of the neck of the scapula. The patient for the first few days was confined to his bed with the fore-arm supported by a sling, leeches and evaporating lotions being applied to the shoulder; afterwards, when the swelling and pain had in a measure subsided, the clavicle apparatus with a pad in the axilla was

made use of. He left the house on the 21st of November, with a useful limb, though with some deformity caused by the falling forwards of the head of the humerus.

Tearing off of both Thumbs by Machinery, one of them bringing with it the entire Flexor Tendon.—William Hart, ætat. 22, was admitted October 17th. 24 hours previous to admission his two thumbs had been caught in the machinery of a cotton mill, which he attended, and dragged off from the hand. The right one was separated at the metacarpal joint; the first phalanx of the left thumb was fractured just above its articulation with the metacarpal bone, and completely torn off, bringing with it the tendon of the flexor longus pollicis in its whole length. The hæmorrhage following the accident had been slight; the wounds had been dressed previous to his entering by a gentleman in the country with adhesive strips, and the hands placed upon splints and were not disturbed, cold being applied over the dressings. After a few days' simple dressings were applied, the stumps presenting a good appearance.

Seven cases of *luxation* have been treated during the term. One of these was a luxation backwards of the upper extremity of the radius produced by a fall from a horse upon the hand, which was reduced, and has been reported in the Medical Examiner by the resident, Dr. Smith. Of the four luxations of the humerus three were downwards into the axilla. With two exceptions they were recent and easily reduced. One case produced by a fall while at sea was of ten days' standing, and required the use of the pullies. The patient being very muscular, free bleeding and tartar emetic were at the same time made use of; the extension was made above the elbow and the bone returned to its socket after fifteen minutes. The second case alluded to was produced by a fall upon the shoulder twenty-one days previously. Some efforts to reduce it had been made, but had been neither violent nor long continued. After being nauseated by tartar emetic, and bleeding, extension was applied by means of the pullies, and the bone restored.

Luxation upwards and backwards of the Femur.—B. Jones, ætat. 29, was admitted on the evening of June 15th, for an injury which he had received a short time before by a fall from a height of ten feet. Upon examination his left limb was found to be nearly two inches shorter than that of the opposite side; the knee and toes were turned inwards and a rounded swelling was felt on the dorsum of the ileum, which, on rotating the limb, was found to be the head of the femur. No change of place being produced by the force of two men to the lower part of the limb, the pullies were applied, the extending band being placed above the knee; moderate extension was kept up nearly forty minutes, the patient having been bled and taken a solution of tartar emetic before the head of the femur seemed to

move; at this time the upper end of the bone was pushed upwards by the hand, and it slipped into its socket. On the 27th he was discharged, cured.

Luxation upwards and backwards of the Femur in a Boy.—John Buley a stout lad, *ætat.* 11, was admitted at noon of the 26th of August. On the afternoon previous he had fallen from a cart and received an injury of his right hip. By measurement the right limb was found to be one and a half inch shorter than that of the opposite side; the toes and knees were turned inwards and rotation of the limb was impossible; a tumour existed on the dorsum of the ileum, evidently produced by a displacement of the head of the femur. The reduction was at once proceeded to; a folded towel passed under the perineum and fastened to the bed post made counter extension, while extension was made with another attached, by means of a wet roller, above the knee; the steady force of two men applied to the extending band for a few minutes brought down the head of the bone and caused it to enter the acetabulum with an audible snap; all deformity of the limb disappeared, and after being kept quiet for some days he was sent back to his friends.

Contusion of the Hip. Difficulty of Diagnosis.—Joseph Whiteman, *ætat.* 8, was admitted on the 6th of August, for an injury of the left hip. It was stated that on the day previous to admission he had fallen upon his hip while at play. This caused him much pain, and some medical gentlemen in his neighbourhood who examined him looked upon his injury as a dislocation of the head of the femur. Strong efforts, kept up for a long time, with the free internal use of tartar emetic, had been made to reduce it. It was further stated that a week or ten days previous to his present injury, the boy had suffered from a fall upon the same part, and that his injury was then also looked upon as a dislocation, and his limb well pulled. Upon examination the pelvis was found to be slightly inclined to the left side, which gave the limb of that side the appearance of being lengthened, but accurate measurement after placing the superior spinous processes on a level showed them to be of the same length. The foot was held in the natural position and the boy could draw the limb up, rotate, and straighten it at pleasure, though these motions were performed very slowly and carefully. The left buttock was evidently much flattened from wasting of the muscles, and this caused the trochanter to be much more prominent than that of the opposite side; no crepitus existed. When placed in the erect position the attitude was that assumed by patients labouring under coxalgia, the boy bearing the whole weight of the body upon the sound limb; considerable swelling existed in the groin, and in a slight degree immediately over the trochanter major, produced probably by the violent pulling which the patient had been made to undergo. The boy was of a highly scrofulous habit and stated upon being questioned that for some time previous to his falls he had occasionally felt pains in the hip and knee of the injured side. The case was looked

upon as one of contusion accompanied by coxalgia in its incipient stage. He was kept quiet in bed; leeches to the groin, and purged. On the 22d of August he was discharged, cured of his contusion, being at that time able to move about as well as before his fall, and free from pain.

The two foregoing cases appear to us worthy of particular note. The first as affording an example of dislocation of the hip at an age in which it is of rare occurrence, the application of a force sufficient to produce it in persons below the age of puberty being most generally followed by a fracture, or separation of the epiphysis and diaphysis of the bone. The last case is well calculated to show the necessity of strict attention, where the diagnosis is at all doubtful, to the history of an accident, as well as of accurate and careful examination of the symptoms supervening upon it. The want of these in the instance noted led to much unnecessary suffering to the patient, and supposing our diagnosis of incipient coxalgia correct, as I think is fully warranted by the history and appearances of the part, cannot do otherwise than exert an unhappy influence on its progress.

Diseases of the Eye.—Eighteen patients labouring under ophthalmia were admitted, of whom a large proportion presented the disease in its chronic form. Several of them accompanied by ulceration of the cornea and iritis. The general plan of treatment pursued consisted in repeated general bleeding, low diet, moderate purging, cupping, blisters to the back of the neck and the application of cold mucilage to the eyes. In the chronic cases slightly astringent washes were used, and in two or three instances of very long standing where the conjunctiva covering the lids was much thickened and in a granulated state, a stick of lunar caustic was drawn over the part with much benefit. In the cases of iritis, mercurials were in every instance administered, and in several of the chronic ophthalmias calomel and opium were given with advantage. Ulcers on the cornea were all treated by the nitrate of silver.

Fistula Lachrymalis.—Mary Doran, ætat. 35, entered May 9th, for a fistula lachrymalis which had existed some months. The eye was injected and the parts about the opening were considerably inflamed. Cold mucilage was kept to the part till the 19th, when, the inflammation having been subdued, an opening was made into the duct with a sharp pointed bistoury and a style introduced. This she continued to wear with benefit till the 23d, when she left the house and was directed to retain the instrument for some time.

Fungus Hæmatodes of the Eye.—Mary P., ætat. 10, entered October 11th. Her parents stated that about two years previously her left eye was observed to be discoloured in its interior and the sight impaired, and that a few months

afterwards vision was entirely lost. About the beginning of September last a small fungus shot out from the part, which has gone on gradually enlarging. At present it occupies the whole orbit, protruding to a considerable extent; is red; irregular on its surface; bleeds on the slightest touch, and is sloughy at its central and prominent part. The patient was of a highly scrofulous temperament; had the lymphatic glands of the left side of the neck enlarged; suffered from pain in the head, with her strength and appetite much impaired. These marks of affection of her constitution by the disease being evident, removal of the part was not recommended, and on the 23d she left the hospital.

Laceration of the Iris. Ophthalmia.—Michael Coly, ætat. 31, admitted May 27th, for ophthalmia of the right side. He states that this followed a severe blow, which he received on the ball of the eye, from a stone or lump of clay while engaged in blasting, ten days before he applied for admission. On entrance, the eye presented the following appearances: violent conjunctivitis; sight entirely gone, the anterior chamber being filled with blood; no injury to eyelids or transparent cornea; acute pain in the eye and side of the head; skin cool; health at no time very robust. Mucilages were applied to the eye; he was purged, and a large blister was placed on the back of the neck; calomel gr. ss. three times a day.

June 6th. Blister has been excessively sore; all pain has left the eye and the redness of the conjunctiva has nearly disappeared; the blood effused into the anterior chamber has been absorbed with the exception of a small quantity which remains at the union of the iris with the sclerotica at the inner and upper part. The iris is seen to have been torn across in its lower half in nearly its whole extent, and presents somewhat of a triangular opening. He now possesses a considerable degree of sight, being able to see large objects distinctly. Has been salivated by the calomel, and is now using washes of tinct. myrrh and chloride of soda for his mouth, and a slightly astringent wash to his eye. On the 4th of July he was discharged with a good degree of sight, the eye having been free from all redness for some days previously.

Laceration of the Iris. Ophthalmia. Loss of Vision.—John Graham, ætat. 30, entered September 17th. Nine days before while engaged in blasting he received a blow upon his right eye, which he states was immediately followed by entire loss of sight. At the time of admission he laboured under acute conjunctivitis, and the iris, which had lost its proper colour and had assumed a greenish hue, was torn across at the inner side near its centre. There was also slight effusion of blood into the anterior chamber, and several minute ulcers upon the transparent cornea. Under a depletory plan of treatment combined with the use of small doses of calomel and opium, and the application of cold to the eye, the inflammation was

subdued, the iris gradually returning to its natural colour, and the effused blood in the anterior chamber being absorbed. On the 27th of October he was dismissed.

Hydrocele. Injection of Tincture of Iodine. Cure.—Robert Poursley, labourer, ætat. 31, entered for a fracture of the leg, in the month of May. During the treatment for this, he made known the existence of a swelling on the right side of the scrotum. Upon examination this was found to be tense, elastic, pear-shaped and diaphanous. He stated that it had commenced at puberty, since which time it had been slowly increasing; that he suffered no pain in the part, but was inconvenienced by its weight. The nature of this disease being made known to him, he demanded an operation, and on the 7th of July, after drawing off the fluid, I injected a mixture of tinct. iodine and water, in the proportion of one part of the former to seven of the latter. The injection was suffered to remain but a few minutes, it being withdrawn as soon as pain was complained of. The day following the operation a good deal of pain and inflammation were present; the scrotum was supported by a bag truss, and the patient kept at rest upon his back, on a diminished diet. On the 12th, the pain had nearly left it, and the part had much diminished in size. On the 17th he left the house. Early in August he called to show me his testicle, which was at that time but little larger than natural, soft, and without pain.

One other case of hydrocele of a small size came under notice, in a patient of delicate constitution, ætat. 50. In it the usual injection of warm port wine and water was made use of on the 20th of May; swelling and tenderness of the part for some days followed, but the operation failed to effect a cure. By the 20th of June the fluid had again accumulated in the sac, and the operation was repeated with an injection composed of two parts of the wine to one of water. The inflammation consequent upon this was greater than that produced by the first injection. This gradually subsided, and on the 7th of July he was discharged cured; no re-accumulation of fluid having occurred, and the testicle being of its natural size and feel.

Cirsocele.—J. W. ætat. 25, entered July 7th, with cirsocele of the left side. Examined after the patient had been using exercise; the veins of the cord of the left side were found to be nearly of the size of the little finger, and greatly convoluted; the testicle appeared sound. The mind of the patient was dejected on account of his affection, and he complained of severe pain in the loins. The general health being good, the case appeared favourable to a trial of the mode of cure proposed by Davat. On the 14th, after isolating the vein from the artery and vas deferens, (the patient being erect,) I passed an acupuncture needle through the skin, anterior and posterior parietes of the veins; after which I pushed it upwards and forwards in such a way as to make it re-appear at the surface half an inch above the place of insertion,

after a second time passing through the sides of the vessel. The needle was then fixed in this situation by the twisted suture, moderately tight. The operation was done almost without pain, and the patient was afterwards confined to a recumbent position, upon a restricted diet. But little inflammation was produced till the 18th, when the part became more swelled, and caused pain when handled; the vein below the needle being very hard and tense; no pain towards the groin. On the 20th the skin around the needle was slightly reddened. On the 21st the needle was removed, the vein below the point of its insertion being hard and painful on pressure; a hard lump of the size of a large filbert, exists at the point at which it was inserted; no pain up towards the abdominal ring. From this date the inflammation continued to diminish, a drop or two of pus being daily furnished from the points through which the needle had passed; but in a few days this ceased, and on the 1st of August he was discharged cured.

Cirsocele. Davat's Operation. Cure.—S. B. ætat. 57, was admitted on the 5th September. The scrotum is so much stretched as to be at once remarked from its extreme length. The testicle of the left side hangs much lower than that of the right, and when separated from the veins which cover it, is found to be both smaller and softer. When allowed to hang without support it gives rise to unpleasant feelings, and the slightest knock or pressure upon it causes severe pain; the veins of the cord appear to increase in size from just below the abdominal ring, and down about the testicle, are much convoluted, irregular, and very large; the swelling is sensibly diminished by placing the patient in a horizontal position, but returns when the erect position is resumed. The patient states that he first noticed his disease about five years ago, since which time it has been gradually increasing, although a suspensory bandage was constantly worn; that a year since he laboured under a hernia of the left side, for the cure of which he wore a truss for some months. At present, even after severe straining and hard coughing, nothing like a protrusion of the bowel exists. He has no pain in the belly or about the ring, and suffers so much inconvenience from his disease, that he entered the hospital by the advice of his medical attendant, for the purpose of undergoing an operation for its cure. On the 19th two acupuncture needles were passed through and through the two largest of the veins, and fastened by means of the twisted suture. After the operation the patient was kept at perfect rest in bed, with the scrotum elevated, and put upon a low diet. Two days afterwards some redness existed immediately around the needles, and on the 24th there was a good deal of swelling and redness of the whole side of the scrotum, accompanied with pain on being handled; slight suppuration too had taken place at the extremities of the needles, and they were both removed; no fever or pain in the groin. Treatment continued, with the addition of lead water to the scrotum. For some days after the last report a drop or two of pus continued to be dis-

charged from the points through which one of the pins had passed. On the 2d October nearly all swelling had left the parts, and the veins were found to be very hard and much reduced in size. By the 5th all inflammation had disappeared, the parts being still more contracted. The patient was now suffered to move about; his diet increased and a smaller suspensor made use of, and a short time afterwards he was dismissed.

The mode of operating adopted in the above cases appears to me much preferable to any of the other methods recommended for the cure of varicose veins, and their results afford additional proof of the safety and efficacy of the plan when carefully applied. The passing of a needle *behind* the vein, and arresting the circulation in it by means of a twisted suture, as recently recommended by M. Velpeau, effects a cure by the pressure causing inflammation and subsequent ulceration, and complete division of the veins; whereas by the method of puncturing the vessel, adhesive matter is at once thrown out around the points irritated, producing the cure by union by the first intention of its internal membrane.

Incised Wound of the Tendo Achillis.—Jas. Tobin, ætat. 18, entered May 5th, with an incised wound of the left leg, just below the lower extremity of the tibia. The injury was caused by a carpenter's adze which had entered just behind the tibia, and made an oblique cut three inches long, dividing completely the tendo Achillis and posterior tibial artery, without injuring the joint. Both ends of the artery were secured by ligature, the sides of the wound being afterwards drawn together by adhesive plaster, and the foot extended upon the leg.

The limb was kept in a carved splint upon its outside, and by the 27th cicatrisation had become perfect under the use of simple dressings and occasional touching with the nit. argent. On the 10th of June he was discharged cured, with a slight elevation, and hardening at the point at which the tendon had been divided, the ends appearing to be very nearly, if not entirely in apposition.

Incised wounds of the tendo Achillis are not very common, and the case just mentioned is interesting at this time, from general attention being now directed to division of that tendon as a means of cure for club-foot. It is well calculated to show the safety of that operation, as well as the fallacy of the opinion so long held, that wounds of tendons cicatrise with difficulty, and are peculiarly apt to be followed by serious consequences.

Cancer of the Lip. Excision.—James Fairbrother, ætat. 48, admitted on the 28th August. He states that four years since a small spot appeared near the middle of the free edge of the lower lip, which he took for a blood blister, and repeatedly bit off. Gradually a hard lump arose at this spot, which increased slowly, and a short time since ulcerated. After ulceration had commenced, caustic was applied to it by a quack, with the effect of

causing it to progress more rapidly. The ulcer occupies fully two-thirds of the free surface of the lip, extending down towards the chin, its edges being hard and everted, and its surface uneven and angry looking. On the 1st of September a triangular portion of the lip, including the whole of the diseased part, was excised, and the sides of the wound brought together by means of three hair lip pins. The two lower pins were removed on the 5th, and the upper one on the 6th of the month, perfect union having taken place. On the 26th he left the hospital.

Strangulated Hernia. Reduction.—Robert Clair, watchman, ætat. 66, entered September 30th, at half past 11 A. M., with a strangulated inguinal hernia of the right side. He states that he has been afflicted with a reducible hernia for the last fifteen years, and that he has during that time constantly worn a truss. At 6 o'clock this morning he removed this instrument while dressing, and found his rupture at once to descend. Being much pressed for time he did not attempt to return it till after he had walked upwards of half a mile, when he found that he was unable to do so. His bowels had not been moved for three days previously, and a physician who saw him before his admission, had administered a dose of castor oil, and bled him. Upon his entrance into the house, a hard tumour of the size of the fist was found descending into the scrotum. Gtt. lx. tinct. opii was given to him, and he was put into a warm bath, before and during which, efforts at the taxis were made. By these means the size of the tumour was reduced; hot fomentations were applied to the part after his removal from the bath, and another dose of oil, with gtt. xxx. tinct. opii, was administered. At two o'clock it run up upon being slightly handled, and a short time after his bowels were freely opened, and all pain was removed. A proper truss was afterwards applied, and on the 6th October he was discharged.

Stone in the Bladder. Lithotripsy. Death.—C. C., ætat. 23, entered August 22d, labouring under all the symptoms of stone in the bladder. The severe sufferings which this patient had for years endured had produced a state of mind bordering on imbecility, and no accurate history of his case could be procured from him. He was of a large frame though much emaciated. Lived in the country. Had travelled from the state of Connecticut to Philadelphia, a distance of 200 miles, and had, no doubt, during that time suffered many hardships. He was admitted into the hospital on the afternoon of his arrival in this city, and from the period of his entrance suffered at all times severely. After remaining quiet for some days on a regulated diet with the free use of mucilages, he was particularly examined. The urethra was found to be of a good size, very dilatable and free from stricture; no enlargement of the prostate existed, and the bladder was so dilatable as to allow him to retain his urine from a half to three quarters of an

hour. The stone was large, and the use of the sound caused him but slight uneasiness. The urine was abundant and deposited at all times a very thick tenacious mucus. Under these circumstances the case was judged to be a fit one for lithotripsy, but, previous to undertaking it, the patient was allowed to recover from the effects of his journey and become in a measure habituated to the air of the hospital.

September 11th. The patient having retained his urine for half an hour previously, a full sized Jacobson's instrument was introduced, and the stone seized and crushed. So little pain was caused by this, that after the withdrawal of the instrument the patient had no immediate desire to urinate, and stated ten minutes after the operation that he felt easier than he had been previous to the stone having been broken up. No chill or other unpleasant symptom followed, and on the afternoon of the day of its performance as well as on the following day (the 12th) a number of fragments were passed away with the urine.

16th. The instrument was again introduced and the stone at once grasped and effectually crushed.

17th. Passed a number of fragments this morning and during the night. An anodyne injection containing gtt. xl. tinct. opii., has been exhibited daily at noon since the period of the first operation, and pulv. Doveri, grs. x., given at night; a general warm bath has also been used, and at such times as the patient has suffered an increase of pain, the warm hip bath has been resorted to; treatment continued.

19th. Suffered last night from a constant desire to urinate, and this morning passed a larger and more irregular fragment of stone than he has yet done; skin cool; appetite not so good.

20th. I introduced the brise-pierre, but, finding the bladder to contract violently, it was at once removed without having been opened. Anodyne enema, and hip bath.

22d. Sufferings in no way increased but there is almost entire loss of appetite; no fever; tongue clear. Sulph. quinine in solution was administered and the warm bath; pulv. Doveri and anodyne enemas were continued.

23d and 24th. Appetite not improved, and there is great loss of strength; surface of body cool; hands and feet cold; pulse very feeble; tongue clean; has a more frequent desire to urinate, and more tenderness of the lower part of the abdomen than he has previously had; no tumidity of abdomen, the muscles of which are hard and contracted; urine clear and deposits a thick tenacious mucus, not, however, in larger quantity than it has previously done; bowels have been moved naturally. Heat to extremities and abdomen; anodynes and hip bath continued. Broth.

25th. Has taken very little nourishment within the last 24 hours; skin continues cool; is dull and listless; pulse 72 and very feeble; urine clear; lower part of belly is more painful when pressed upon. Warm poultice to abdomen; heat to extremities. Arrow root with wine and weak milk punch.

26th. He was less dull and had taken more nourishment but was exceedingly feeble; free, natural discharge from the bowels. Treatment continued.

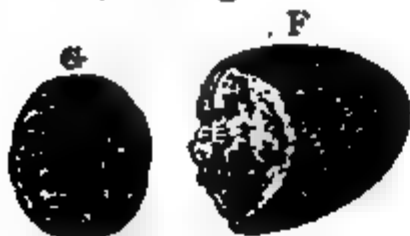
27th. He was more dull than ever, but could be roused, and was free from delirium; the abdomen was more painful over its lower part than it had yet been, but there was no tumidity of it. Blister to abdomen. All nourishment refused except milk punch. Death at 9, P. M.

Autopsy, fifteen hours after death. Great emaciation; slight distension of the abdomen; the peritoneal coat of the intestines is inflamed, particularly towards the pelvis, and there is some effusion of puruloid serum in the cavity of it; the peritoneal covering of the abdominal muscles is also inflamed, but in a less degree than that of the intestines. The bladder which was strongly contracted was removed from the body and opened by an incision on its anterior part extending from the prostate to the fundus; another incision passing from the centre of this laid open a cyst, situated on the left side, capable of containing a large filbert, and communicating with the bladder by a small opening. Half an inch posterior to this opening, and about one inch

above the left ureter, a smooth, rounded and narrow opening (D) leading into another and much larger cyst (C) existed, the peritoneal covering of which was strongly adherent to the descending colon. The larger cyst contained thick dark coloured pus, and a portion of the lining membrane of the bladder was protruded through the opening into it. The coverings of the cyst were dark coloured, and softened to such an extent as to give way on being lightly handled after the bladder was taken out. Several small pouches formed by the protrusion of the mucous membrane between the fibres of the muscular coat were seen about the fundus of the bladder, in one of which a very small fragment of stone was found. The mucous coat was thickened and slightly reddened in spots, but was not softened.

- A. Incision laying open the bladder from the prostate to the fundus.
- B. Incision perpendicular to the latter, laying open the smaller cyst.
- C. The larger cyst.
- D. Opening leading into the bladder.
- E. The ureter.

The prostate was natural. The stone had been caught in its short diameter, near its centre, and thoroughly crushed, nearly one half of it having passed off. Only two fragments were found in the bladder, a small piece (G.) which had formed one end of the stone was lying behind the opening into the urethra, and the larger portion (F.) was lying at the fundus. The left kidney was enlarged



F. & G. Portions of stone found in the bladder.

to nearly twice its natural size and its pelvis contained a quantity of puruloid serum judged to be nearly 3i. in quantity. A cyst, capable of admitting the end of the thumb, existed in the lower part of the medullary substance and communicated with the pelvis of it. The left ureter in its whole length was much enlarged and thickened. The kidney of the right side was five inches long and two and a half wide at its middle; an incision made along its posterior part showed the cortical and tubular portions to be entirely absorbed in its upper half, while in the lower half, the tubular part had equally disappeared with a portion of the cortical, so that the whole kidney resembled a large cyst. The right ureter in its whole extent was similar to that of the left side, enlarged and thickened. The stomach, spleen, and pancreas were natural. The lungs were free from tubercles.

The difficulty of diagnosis in diseases of the kidney is well known; the above case affords another example of this, and shows that even great destruction of these organs may occur without giving rise to any particular symptoms which make it known. The sufferings of the patient, though severe, were not greater than are usually attendant upon stone when of long standing and the case appeared in every way well adapted for lithotripsy. The fatal result can in no way, I think, be attributed to the operation, nor can it be advanced as an argument against the method employed. No force was used in the introduction of the instrument. The stone which was large was readily caught and crushed without producing pain; all the smaller fragments and sandy matter being subsequently passed off without difficulty. The mucous membrane of the bladder was not more inflamed than must be the case in every instance in which the disease is of long continuance. The opening leading into the cyst on the side of the bladder was small and would not have admitted the instrument made use of, even supposing it to be placed in the most favourable situation for entering it. The cyst had evidently long existed, being attached to the colon by old and firm adhesions, contained dark coloured pus and was in a state approaching to gangrene. The peritoneal inflammation which carried off the patient took its origin from this point and had probably followed ulceration of its internal coats.

An interesting case of aneurism, seated at the upper and outer part of the leg which came under notice and was cured by ligature of the femoral, will be reported hereafter.

November, 1838.

ARTICLE II. *Experiments proving the existence of a Venous Pulse independent of the Heart and Nervous System, with remarks on the contractility of veins in general.* By J. J. ALLISON, M. D.

THE venæ cavæ and pulmonary veins* have pulsations distinct from those produced by a reflux of blood from the auricles.† These vessels beat vigorously for many hours after separation from the heart and body.

This fact has not been noticed. Pulsations of the venæ cavæ after excision of the heart had been observed, however, by Wallæus‡ in dogs, about two hundred years ago, and by Spallanzani§ in reptiles. Without being aware that pulsations had been previously noticed, the author of this article observed them in the *four classes* of animals; and some of his observations were given in 1836, in his Inaugural Essay on the Lymphatic Hearts.

The discovery of Wallæus seems to have been overlooked, being quoted by the older anatomists only, as Bartholin, Lancisi, and Senac, though pulsations of the venæ cavæ in their natural state have been seen by Steno, Lower, Wepfer,|| Borrachius,¶ Whytt,** Haller, Lancisi, and Senac. Steno expressly states that he has seen the venæ cavæ of rabbits alternately contract and dilate a number of times, before the right auricle had made a single motion, and even after the whole heart had ceased to beat. In one experiment, having

* And also, perhaps, the coronary veins as stated by Lancisi. Opera Varia, 1739, tom. ii. de Motu Cord. et Aneurismatibus, p. 212.

† In our vivisections we often see a pulse as far as the iliac veins, arising from the cause mentioned in the text.

‡ Medica Omnia—Epist. ad Casp. Bartholin de motu chyli et Sang. 1660, p. 254. I quote the passage:

“Pelli autem à vena cava sanguinem in dextram cordis auriculam, manifesto vivis dissectis animalibus conspeximus: in omni enim cordis motu à vena cava primi motus initium est, quod cum dubitaremus an non fieret, quia cava auriculæ cordique connexa esset, cor et auriculum resecurimus prorsus in canibus vivis à vena cava, et animadvertimus etiam tum venam cavam pulsare minimum, et singulis vicibus aliquid sanguinis effundere. Quare et plerumque circa cor vena cava carneas quædam fibras accepit, quas alibi in vena cava haud invenias: eæ autem admodum conspicuæ in hominis, bovis, canis cava possunt videri. Motus autem ille venæ cavæ prope cor evidentissimus est, ut plurimum tamen eam quoque in vivis canibus observavimus toto illo ductu ab hepate et à jugulo in cor usque. See also pp. 250, 252, 263; and Anatomia Bartholini, 1673, lib. ii. 403; and p. 783.

§ Exp. Sur. La Circulation etc. Diss. iv. Exp. clxvi., clxxi., and Result vii.

|| Postquam respirare desiit diu adhuc cor totum, hinc auriculæ ambæ, tandem sola dextra et vena cava ad huc movebantur, etiam tunc quando abscideram venas et arterias axillares.—De Cicut. Aquat. 1679, p. 172.

¶ Epist. 51, Cent. iv. ad Bartholinum, p. 333. Also, Sylvius, Plemp, and Fantonius, cited by Haller, tom. i. p. 400. Cowper saw the same phenomenon, but supposed it to be caused by the aorta. *Idem.*

** In a pigeon. Whytt's Works, p. 188, London, 1768.

tied the three cavæ of a rabbit, he allowed the blood from the ventricle, auricle and cavæ beyond the ligature, to escape through an opening made at the bottom of the ventricle, when all motion in the several parts entirely ceased, but the cavæ were re-excited, on being distended very slightly by the entrance of blood from the vessels of the heart; and after the ligatures were relaxed, and the blood allowed to resume its motion, the auricles themselves were restored to their accustomed action.* Steno observes, that after the heart of a raven had ceased to beat, motion continued, nevertheless, in the auricle near the cavæ, and that the vena cava inferior pulsated a long time after all motion had ceased here, exhibiting two motions very distinct from each other—"eorum alter in parte remotiore exterius conspiciebatur, alter interiori latere in parte cordis proxima"—but what most surprised this experimentalist was, that the right ventricle having been cut off, and the blood thus escaping, the pulsation continued—though the veins themselves were perfectly collapsed—till the afternoon of the second day, the animal itself having been opened about the ninth hour of the morning.

Lower was aware of many of these facts, and maintains that the muscular tunic of the venæ cavæ, which exists as well in man as in most animals, not only keeps them within just limits, but strongly urges the blood into the auricles of the heart.† He contends that the undulation of the blood in the cavæ after death of the auricle, does not result from an intestine motion of the blood, but from an action in the vessels themselves, through the medium of a nervous influence. Quod ad undulationem istam sanguinis in vena cava post emortuam auriculam attinet; arbitror, illam nullo sanguinis intestino motu, sed vasorum, à spiritibus per nervos ubique distractis, corrugatione contingere; non aliter quam spiritus in musculis ubique oberrantes, motum illum tremulum post mortem diu protrahunt,‡ &c.

Lancisi, Whytt, Haller, and Senac,§ confirm many of the observations recorded by Steno. Lancisi has, in addition, seen in horses the venæ cavæ pulsate four or five times, while the auricles themselves performed but one contraction. The action of both auricle and cavæ were re-excited by mechanical and other stimuli. From all his observations, Lancisi concludes it to be a fact which does not admit of doubt—that there is a *peristaltic action*|| in the branches and ramusculi of the venæ cavæ, propagated as it were from the point of a cone to its base, or from the smaller to the greater branches, and to the very trunks themselves—ut non sit ambigen-

* Act. Hafniens, tom. ii. Obs. 46, n. 7, usq. ad. 12, cited by Lancisi, op. cit. p. 211. See also Bartholin. Epist. Med. Cent. 4 p. 3, 109, &c. Whytt also made similar experiments, and attributed the pulsations to *stimulus* of blood. Op. cit. p. 191, 229.

† Tractatus de Corde, &c., 1671, p. 53. ‡ Op. cit. p. 73.

§ Traité de la Structure du cœur, &c., 1749, tom. i. lib. ii. pp. 334, 335, &c.

|| Perrault also contends for a *peristaltic* movement in both arteries and veins. See Portal. Hist. Med. et Chirurg., tom. iii. p. 391, and De Gorter (De motu vitale) says the same, of the smaller vessels.

dum—says this illustrious anatomist—quin peristalticus motus in ramis, ac ramusculis ipsius cavæ fiat a cuspidibus ad bases, seu a minoribus ramis ad majores, et maximos truncos.* And again—In gallinis igitur celeriter apertis cernitur quam distinctissime motus non tantum omnium ramorum cava versus auriculam;† sed etiam illius venæ coronariæ, quæ *per ipsam cordis longitudinem a cono* (intellige verticem) basim versus fertur, ita ut ejusdem tunicæ concussio a cuspidē videatur incipere, et inde ad basim usque cordis continuare.‡ Whytt is of this opinion. He remarks in his observations on Irritability,§ that since the alternate contractions of the trunks of the venæ cavæ near the heart show them to be possessed of a great degree of irritability, it is not probable that the other veins are without it. Haller,|| indeed, denies any peculiar motion to the cava, says Whytt, and ascribes its seeming alternate dilations to the blood pushed back into it by the contracting auricles. But if this were so, he inquires, how could the cavæ contract five or six times before the right auricle performed one pulsation, as Steno observed in rabbits? Or how could it continue its alternate motion, not only for a considerable time after the auricle had ceased to move, but even when the heart, with that auricle, was separated from it.¶ Though the illustrious Haller acknowledges in his later works, the true cause of the motions of the venæ cavæ,** he does not admit (after numerous experiments on the subject) that the generality of veins have any irritability whatever.††

In reference to this subject Senac has justly remarked, that the contractions sometimes commence in the venæ cavæ and extend to the auricle, and *vice versa*.‡‡ He seems indeed to doubt whether Lancisi has really proved the existence of a peristaltic motion in the branches of the cavæ,§§ a point which, as we shall presently see, is exceedingly doubtful.

* Op. cit. De Motu. Cordis et aneurismatibus, p. 211. Lancisi occupies two folio pages on the subject, the chapter being headed “De observatis motibus venæ cavæ, et pulmonicæ, auriculæ dextræ, venarum coronariarum, et ventriculorum in vivorum sectionibus.

† The peristaltic motion mentioned by Lancisi probably arose from the *return* wave from the original motion communicated to the blood in the cavæ by the contracting cavæ and other extraneous causes.

‡ Op. cit. p. 212.

§ Op. cit. p. 276.

|| Primæ Linæ Physiologiæ, ed. 2. No. 113.

¶ Wallæus, Op. cit.

** Haller observes in relation to this subject, Element. Physiol. tom. i. p. 124.—“Media venarum membrana obscuria est, neque oportet ejus fabricam a vena cava parte cordi proxima mutuari. Nam ea quidem hujus venæ sedes manifesto et in omnibus animalibus mihi notis, musculosa est, ut etiam pulset, et conspicua contractione sanguinem in aurem dextram compellat. (Second Memoire sur les part. irrit. Exp. 413, 475, 480, &c. &c.) Uti vero contractio a reliquis venarum truncis abesse videtur, ita etiam fibras contractiles nullas in venis admittere oportet, donec aliis experimentis constituentur. See also tom. i. 399, 400, 410, &c.

†† Loc. cit. See also tom. i. 126. tom. ii. p. 353, 325.

‡‡ Senac op. cit. p. 336.

§§ Op. cit. p. 335.

The independent pulsations of the *venæ cavæ* and pulmonary veins seem to have been unknown to most modern observers. Nysten,* Broussais, and Müller refer to it. Broussais indeed argues—from witnessing some experiments of Sarlandier's on frogs—that the veins possess contractile movements, acting from the circumference of the body towards the centre, and that this action is one of the principal forces which cause the return of blood to the heart.† He infers that the action of the large veins in the vicinity of the heart, might for a time supply that of their origin, and give sufficient force to the blood to enable it to traverse the circulatory circle.‡ Müller remarks that he observed the phenomenon both in the pulmonary vein and *venæ cavæ* of frogs, extending in the latter as far as the liver.§ First of all, says he, the *cavæ* contract, then the auricle, next the ventricle, and lastly the *bulbus aortæ*. Müller has also seen contraction of these veins in the cat and martin, though in these animals he remarks they are synchronous with the auricles. He does not speak of the action of these vessels in quadrupeds continuing after excision of the heart; and maintains that the veins themselves, with the exception mentioned, have no contractile power:|| an opinion, as we have seen, contrary to that entertained by Lancisi, Whytt and Broussais. Broussais, however, while he believes the contractions common to the whole extent of the venous system, admits that they have hitherto been seen distinctly in the trunks only of the large veins.¶

Marshall Hall,** Flourens,†† and others have also observed pulsations of the great veins of frogs, though they do not refer to them as being independent of the heart.

* *Recherches de physiol. et chimie pathologiques, &c.*, Paris, 1811. Nysten says, that the *venæ cavæ* and auricles retain their excitability for nine or ten hours after death, p. 351. He has seen them contract under galvanism in birds and fishes, p. 349. And observes, that the insensibility of other veins to galvanism, prove that they do not possess a sensible organic contractility, (*contractilité organique sensible*), though it does not result from this that they are inert in their action on the blood, for he believes they are endowed with a tonic force (*force tonique*) sufficient to continue the impulsive movement of the blood which it receives from the capillary system, and so carry it on towards the heart with a gentle and uniform action, p. 359. And this we think to be a just view of the subject. Wiedemeyer has seen *venæ cavæ* contract under galvanism, and Kaltenbrunner by mechanical irritation.

† *Physiol. applied to Pathology*, p. 366.

‡ *Principles of Physiol. Medicine*, p. 290.

§ *Elements of Physiology*, 1838, p. 170.

|| *Op. cit.* p. 233.

¶ *Physiol. applied to Pathology*, p. 366.

** *Essay on the Blood, &c. Phil.*, p. 78, 1835. Hall observes that an artery and a vein being subjected to water of 120° F., the artery grew rigid, while the vein suffered no apparent change. Hence he argues the one to be muscular and the other not so. But does this experiment even prove *arteries* to be muscular? For why may not *other tissues* be acted on by hot water as well as the muscular tissues?

†† Müller *op. cit.* p. 204, says that the contractions of the large abdominal veins seen by Flourens probably arose from the action of the lymphatic heart.

Such then appears to be our knowledge of the contractile power in the large veins about the heart which, with two or three exceptions, has escaped attention, and by no one has this subject been investigated to that extent which its importance demanded.*

Many authors, as John Hunter,† Blumenbach,‡ Meckel,§ Parry,|| Wilson,¶ Beclard,** Scemmering,†† Tiedemann,‡‡ Richerand,§§ and Hastings,|||| maintain that veins, in general, possess a contractile power, a sort of *vital force*, as Kramp calls it, which, however, differs materially from that pulsating action which is so evident in the *venæ cavæ* and pulmonary veins.

John Hunter argues that the muscular power adapts the veins to the various circumstances which require the area to be within the middle state and assist the blood in its motions towards the heart.¶¶ He thinks that when there is an unusual action of the vascular system, the action of the arteries and veins is alternate.*** The muscularity of these vessels he affirms is very evident in the turtle and alligator, their inside being quite fasciculated.††† Hunter thinks that the *vena portæ* performs the function of an artery,‡‡‡ which Mr. Abernethy remarks is strengthened by the fact that

* Broussais observed the pulsations of the *venæ cavæ* to last *many minutes*; whereas my experiments prove that the *venæ cavæ* and pulmonary veins will beat even in quadrupeds for a *whole day* or longer after having been removed from the body and placed on the table! Broussais does not speak of his having seen the contractions in other animals than frogs, nor does he seem aware of the fact having been noticed previously.

† Hunter's Works, edited by Palmer, vol. iii. London, 1837.

‡ Human Physiology by Dr. Elliotson, containing much of the elementary part of Blumenbach's *Institutiones Physiologiæ*, p. 171. London, 1835,

§ Gen. Anat. vol. i. p. 128.

|| Parry, though he denies that the veins can pulsate, *Posthum. Works*, vol. i., p. 73—75, &c., 1825, admits that every part of the vascular system possesses a vital source of contraction which he calls *tonicity*, preserving the vessel in a mean state capable of increase or diminution according to circumstances, (*Introduct. Essay* by his son, p. 67.)

¶ Lectures on the Blood, &c., p. 193, 1819.

** Addition to Bichat's, *Gen. Anat.*, p. 107.

†† *Corp. Humani Fabrica* tom. v., p. 337, &c. Scemmering remarks: "*Vis autem hujus motus partim a corde proficiscitur, quia in hominibus asphyxia correptis per hoc solum, sanguinis circuitus restituitur; partim ab arteriarum, unde illæ prodeunt, contractilitate atque irritabilitate partim a proprio venarum vigore vitali.*" Again p. 333, he says, "*Trunci venarum exceptis iis locis, ubi circa finem distinctis fibris muscularibus circumdati sunt, minus irritabiles, quam ipsarum radiculæ esse videntur. Ubi autem truncis fortia admoventur acida, arctius ipsis arteriis sese contrahunt.* See also sect. cxxxi., and pp. 328, 334.

‡‡ *Outlines of Human Physiology*, pp. 149. 404. 407., &c.

§§ *Elements of Physiology*, p. 212, edited by Prof. Chapman. The distinguished editor thinks that there are many arguments in favour of venous contractility, though the fact has been so often denied, and adduces in evidence the dissections of Verschuur and Haller, which prove the existence of muscular fibres in certain veins.

|||| *A Treatise on the Inflammation of the Mucous Membrane of the Lungs*, p. 52, &c. 1820.

¶¶ Hunter op. cit. vol. iii. p. 222.

*** Idem. p. 228.

††† Idem. p.

‡‡‡ Idem. p. 221.

this vessel fails to secrete or secretes with profusion; variations of function which can scarcely be supposed to take place in a perfectly passive vessel.* Mr. Wilson adopts these views of Hunter, and as a proof of veins possessing muscularity he states that for long periods together they are less than the medium state or that in which they are found in the dead body; as in the case of cold acting upon the superficial veins of the hand. However, with the exception of the vena portæ which assumes the office of an artery, he thinks that veins in other parts are more passive than active, and serve principally to convey blood back to the heart.† Although Mr. Wilson seems to admit a contractile power in the larger veins, he remarks that no pulsation is perceptible in them except in case of certain obstructions about the heart.‡ Meckel also observes that the veins are susceptible of vital contractions, especially the larger trunks, yet they change not in diameter, neither do they pulsate except in some rare and extraordinary cases.§ Tiedemann and Scëmmering|| admit the veins as assistant powers of the circulation.

Beclard maintains that the veins possess a property different from those which exist after death, and consequently vital. He states, in illustration, that a vein, opened between two ligatures, expels, with some force, the blood contained within, unlike what takes place in the dead body; and remarks that if we compress in a living animal the great artery of a limb, at the same time keeping the latter in a horizontal position, we shall see the subcutaneous veins contract and gradually empty themselves of all the blood which they contain.¶ Beclard, indeed, contends that the venous circulation is principally owing to the capillaries and action of the veins themselves. The proofs, however, in favour of general organic contractility of the venous texture, are not conclusive, for other than vital causes may increase or lessen the size of a vessel. It must be evident that *cold* is no test of contractility, inasmuch as it acts as well on the dead as living fibre, and upon the fluids within. Haller has shown the action of acids to be an inconclusive test.** In relation to Beclard's experiment on the limb it is sufficient to reply, that it may be explained on mere principles of atmospheric pressure, without calling to our aid a vital force.†† Nor is the experiment

* Physiological Lectures, &c. p. 235, London, 1825.

† Wilson Op. cit. p. 193.

‡ Idem. p. 188.

§ Loc. cit.

|| Loc. cit., Scëmmering observes that the venæ cavæ and pulmonary veins pulsate.

¶ Op. cit.

** Element. Physiol., tom. i. p. 126.

†† And why should not the blood reach the heart after all further supply from the arteries has been cut off, without calling in aid the action of the veins themselves? Have we not still in action the suction power of the heart and chest, assisted it may be by the action of the capillaries? It seems to us that the acquired velocity of the blood pressed upon by the elastic tubes through which it flows, would of itself be sufficient to maintain it in action some time towards a cavity open to receive it after a ligature has been applied around the vessel.

of puncturing a vein between ligatures more conclusive. It follows as a natural consequence, that the vessel being turgid with blood and the fibres themselves put on a considerable stretch, that on its being punctured the blood will rush out with some force. This will not so readily happen in the dead body for two reasons; first, that the fibres have been kept a long time tense by turgidity of the vessel, and hence lost much of their elasticity; and, secondly, that the blood is not in so fluid a state as in the living animal. It appears then that, with the exception of the larger veins within the thoracic cavity, we have hitherto had no absolute evidence of sensible vital contractions of any part of the venous system.

Among those who deny that veins possess contractile powers, rank Bichat,* Magendie,† Bostock,‡ Mayo,§ Dr. Mason Good,|| Drs. Barry and Carson. They view the veins as simple elastic tubes, the blood being transmitted through them without the aid of any inherent power in the veins themselves. Bichat, however, believes that the veins possess contractility of texture as evinced in venesection and by the action of cold,¶ but is doubtful in reference to sensible organic contractility, for he is not certain that he has seen it, although he irritated the veins different ways, both internally and externally; if it does exist it is hardly perceptible because the vascular fibre is so very scattered.** *La question, says Bichat, n'est donc pas tout à fait résolue, quoique je penche infiniment plus à croire qu'il n'y a pas d'irritabilité veineuse.* He admits, however, *Comme les veines caves ont des fibres charnues manifestes à leur origine, il est évident qu'elles jouissent en cet endroit de la contractilité qui nous occupe.*†† According to Majendie it is impossible to irritate veins either by galvanic or mechanical stimuli, and it is a mere chimera to attribute contractility to them.‡‡ Mayo argues against the irritability of veins because the effect of their valves which act by mechanical adjustment to a given area would be defeated were they readily capable of enlargement.§§ Bichat maintains, however, the presence of valves to be necessary to contractile vessels; and argues that the arteries are not muscular, because they have no valves, inasmuch as did the contractions take place simultaneously through their whole course it would have a tendency to propel the blood backwards or forwards.|||| Now, though we are far from contending for any contractility in the arteries or smaller veins, still we do not view the arguments referred to as proving that

* Anatomie Generale, tom. i. p. 379, 380.

† Physiology translated by Millegan, pp. 324, 339, &c.

‡ Elementary System of Physiology, vol. iii. p. 340.

§ Physiology, p. 69. 1833.

|| Study of Medicine, vol. i. p. 304, N. Y., 1837.

¶ Anat. Gen., tom. i. p. 377.

†† Idem. p. 380.

§§ Loc. cit.

** Idem. p. 379.

‡‡ Element. Physiol. pp. 324. 339.

|||| Anat. Gen.; tom. i. p. 371.

the vessels do not possess this contractile power. In answer to Mayo it may be remarked that the veins of the *cetaceæ* have no valves, which is the case with important veins in quadrupeds and other animals. The existence of valves, however, in other veins would not at all interfere with their contractile power, because supposing the vessel to enlarge and the adjustment of the valves themselves considerably altered, still the *vis a tergo* action, from whatever quarter it be derived, whether from capillaries, arteries, or heart, strengthened by a *vis a fronte* power of the auricles, &c., would most assuredly overcome all impediment to the natural flow of the venous blood.* In reference to Bichat's assertion that the presence of valves are necessary to a contractile vessel, it may be answered, that the contraction of arteries would have a tendency as well to expel blood backwards as forwards were there not other forces in action, as of the heart, and centripetal force exerted by the venous blood. This may be illustrated by supposing a flexible tube of some length, connected at either extremity with a syringe filled with water; now these two acting simultaneously, the one as a forcing, the other as a sucking pump, while the tube, throughout its whole length, is made to diminish in diameter at every stroke, what would be the result?

It appears that Blumenbach,† Bichat,‡ Wilson,§ Magendie,|| Arnott,¶ and Elliotson,** who admit a venous pulse near the heart, ascribe it to a *reflux* of blood into the vena cava, which in certain cases may be very perceptible in the more superficial veins, when it arises either from a retardation of the blood in the pulmonary artery, from obstacles in the lungs, or from want of a sufficient force in the ventricle. For, as Blumenbach remarks, it does not correspond to the heart, but with respiration, for if an expiration be unusually deep and lengthened, and the reflux of blood to the lungs thus impeded, the jugular vein swells as far as the brain; the subclavian as far as the brachial; and the inferior cava as far as the crucial. Dr. Elliotson observes, that when the ventricles are nearly filled, and still more when contracting, the blood must accumulate in the auricles, and the stoppage be felt even in the large veins; for which reason, just before, or rather at, the moment of the systole of the ventricles, we sometimes see the jugulars swell. Some have adduced the swelling of the jugulars before the stroke of the heart, as a proof that the auricles contract before the ventricles; but we

* Mayo takes it for granted that the veins do not *dilate*, because the mechanical adjustment of their valves would be defeated were that the case. But they do *dilate*, though not by their own power as when we apply a ligature around the arm, and in warm weather, &c., yet the action of the valves is not defeated, inasmuch as the blood still continues to flow towards the heart. Whether the mechanical adjustment of the valves in such cases be altered is another question.

† Human Physiology by Dr. Elliotson, p. 190, 1835.

‡ Anat. Gen. tom. i. p. 418.

§ Element. Physiology, p. 399, &c.

** Op. cit. p. 190, 192.

¶ Lecture on the Blood, p. 188.

‡ Elements of Physics, vol. i. p. 449.

have always found it occur at the same moment with their stroke; and the impossibility of passage into the ventricle explains the fact. Elliotson maintains that, as at the moment the auricles lose their blood, the ventricles are relaxed or expanding, there can be no reason for the blood moving at all backwards, when the auricles contract. I fully agree with Dr. Elliotson, and would observe that I have frequently seen the auricle contract powerfully, without being followed by any dilatation of the cavæ, although the blood will be seen to oscillate within them. But the cavæ contracting *simultaneously* with the ventricles, must certainly have as great an effect on the swelling of the jugulars as the latter. Bichat says that the venous pulse is never the effect of irritability in the veins themselves, and thinks that it may result from irregular motion of the heart, even when there is no obstacle in the lungs, being persuaded that if diseases of the heart were so frequent in the right as left side, they would produce a reflux of blood in the veins;* in other words, a venous pulse.

In reference to the venous pulse Haller very justly remarks, that it may depend upon the following causes: obstacles about the heart, polypi in the aorta; aneurism of the right ventricle; dropsical enlargement of the mitral valve; false productions, obstructing the large veins, &c.† The experiments of Haller fully prove pulsation of the larger veins about the heart, even when no obstruction to the circulation could cause it;‡ for these pulsations continued even in warm-blooded animals, after all motion in the auricles had ceased;§ and after the veins themselves had lost the power of contracting, mechanically stimuli restored it.|| Haller denies, notwithstanding, that such veins possess a *true* pulse, because the accelerating powers of the heart (*vis acceleratrix cordis*) is destroyed before the blood reaches the venous system.¶

Cases of venous pulse, in certain morbid conditions of the system, are recorded by Schreiber, Homberg, Monro, Morand, Lancisi, Hanauld, Weitbrecht,** Morgagni,†† Elliotson,‡‡ Rush,§§ Johnson,||| Davis,¶¶ and others.***

* Loc. cit.

† Element. Physiol. tom. ii. lib. vi. p. 356.

‡ Tom. i. p. 125, 126, &c.

§ Tom. i. p. 400, 410.

|| Idem p. 399.

¶ Tom. ii. lib. vi. p. 353.

** Haller cites their respective works, tom. ii. p. 356.

†† De Sedibus et Causis Morborum, lib. ii. epist. xviii.

‡‡ Elliotson Op. cit. p. 191.

§§ Philadelphia Journal Med. and Phys. Sc. xiv. 182.

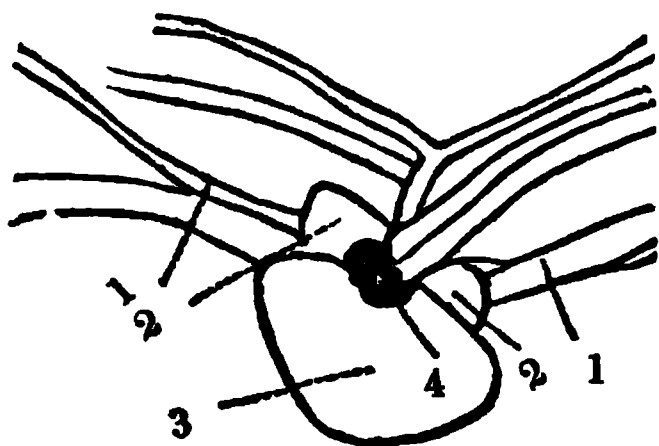
||| Medico-Chirurgical Review, xxxii. p. 569.

¶¶ Dublin Hospital Reports, iv. 272.

*** I have lately seen pulsations of the subcutaneous veins of the neck in a lady who had a violent headache to which she was subject, the cerebral murmur was louder and more hurried than usual. Gallen relates a similar case, see Morgagni, op. cit. lib. xviii. 11.

EXPERIMENTS.—In reference to the venæ cavæ and pulmonary veins, there are two great points which distinguish their inherent pulsations from those produced by the reflux of blood from the auricles—namely, that the contractions of the veins are not always synchronous; and that they will continue after the entire heart has ceased to beat.

Fig. 1.



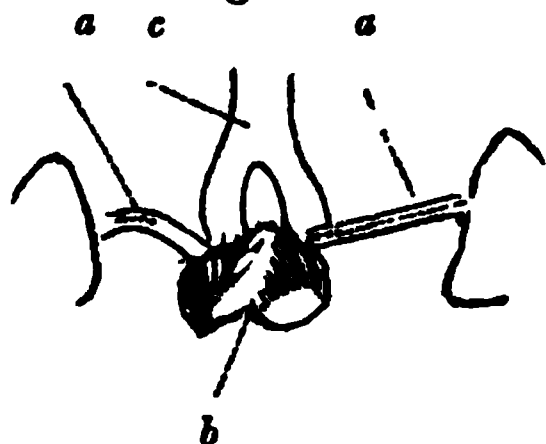
The following figure represents the heart of a tortoise, (*testudo clausa*,) the relative motion of the veins (1), auricles (2), ventricles (3); and bulbus aortæ (4), being indicated by their respective numbers.*

The pulsation of the veins was observable to the extent marked out in the figure. The auricles are represented in their contracted state; they often, however, exceed the size of the ventricles themselves, from want of sufficient power to expel the blood. The above phenomena may be noticed in fishes, birds, and quadrupeds, though disturbing forces will cause a great variety in the order in which the pulsations follow one another, as will be seen in the sequel.

The following experiments prove that the venæ cavæ, &c., pulsate after excision of the heart, and that the motion may exist at one extremity of the vessel, and not at the other.

EXPERIMENT I.—At 5 P. M. the heart of a *Frog* was cut out, including the bulbus aortæ and roots of the venæ cavæ, no vessel having been secured. The pulsation of the pulmonary veins continued for five hours and a quarter, and probably much longer, for my attention was withdrawn from the specimen at the end of that time. I think that the pulsation did not commence till quarter before seven, at which period the muscular system had ceased to

Fig. 2.



be excited by galvanic stimuli applied to the brain and large nerves. It is an interesting fact that the motion undulated from the brachial towards the cardiac extremity of the vessels; moreover, that the right vein pulsated only at its external portion, the other throughout its whole extent. Fig. 2. represents, *a, a*, the pulmonary veins, the extent of their respective motion being indicated by dots. *b*, coagulum in situation of the heart. *c* laryngeal region.

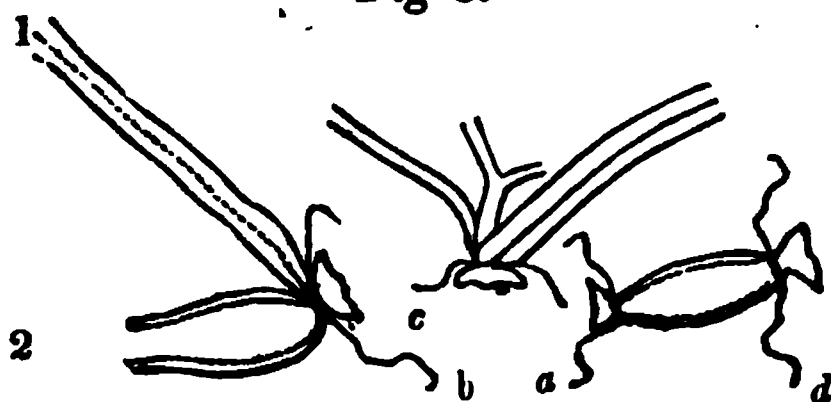
EXPERIMENT II.—The same fact in relation to a single portion of a vein pulsating, was noticed in the vena cava superior, which continued eight

* Perhaps the venæ cavæ and ventricle are generally very nearly synchronous, agreeably to the observations of Senac. *Traité de la Structure du cœur*, &c. tom. i. 310—314.

hours—averaging sixty to eighty per minute—after excision of the heart. These facts I have repeatedly witnessed. It may be proper to remark, that after the removal of the heart, the animal often, if not generally, becomes perfectly flaccid and insensible.

EXPERIMENT III.—In the *tortoise* from which *fig. 1* was taken, the two pulmonary veins of the left side were tied by the ligature *a*, (see *fig. 3*,) so as to intercept the flow of blood; the pulsations continued, however, 32 per minute, which they averaged, I think, before the operation. During each contraction the vessels were extended with some force towards the heart. Thinking that the alternate contraction and dilatation of the veins might possibly depend upon this very circumstance, I cut them from the heart close to the ligature; the locomotion ceased immediately, but the pulsation continued, averaging 36 to 40 per minute, while the auricle was only 20. The corresponding veins of the right side were tied by the ligature *b*, and cut ten minutes after the first. They also continued to pulsate 40 per minute, while no motion was perceptible in either auricle or ventricles. The pulsations of opposite veins still averaged the same. No loss of blood followed this operation. Seventeen minutes after tying the left vein, a ligature was thrown around the aorta near the heart at *c*, and the entire organ removed from the body, after which it beat, though it was motionless before the operation. The left veins immediately after pulsated 48; the right 36; while the heart on the table averaged only 2 per minute. *Fig. 3*

Fig. 3.



represents the veins after the heart had been removed. The extent of the pulsation being indicated by dots. Six minutes after excision of the heart, pulsation of the veins 40. Those of the left side (1, 2) of the figure did not beat simultaneously. One hour

after removal of heart, left veins 36 to 40, while those of the opposite side averaged less. Being mechanically irritated, they rose to 48, becoming much more natural and strong. At this time the heart had lost all motion, and at the end of three hours the animal itself had become perfectly flaccid and dead. Five hours from the beginning of the experiment the vessels averaged 28 pulsations per minute, which differed but little, if any, from their normal strength. It is worthy of notice that the collapsed extremity of the vein also pulsated, though not simultaneously with the portion beyond the ligature, thus confirming a fact stated in Experiments I. and II. Motion was observable for *eleven hours* in the pulmonary veins.

EXPERIMENT IV.—The left pulmonary veins of a *Tortoise* were tried, and the heart taken out as in the preceding experiment; the vessels both sides of the ligature pulsated, the motion being particularly strong at the

collapsed extremity beyond the string, as in Experiment III. The pulsations were not so frequent as those of the opposite side.

EXPERIMENT V.—The heart of a *Tortoise* being exposed at ten minutes of 10 A. M., pulsated only ten or twelve per minute. The auricles did not contract to so great a degree as natural, and were distended much beyond their common size. The pulmonary vein on the right side was cut without having been tied, at thirteen minutes after ten, when it retracted nearly an inch from the heart, a circumstance which always takes place.* For three minutes no motion could be observed in the vessels, but very soon after, one or two feeble contractions, a very powerful one resulted, which, like an artery, propelled the coagulated blood at its orifice to the distance of an inch, the pulsations averaging 7 or 8 per minute; the jets of blood continued, though to a less degree. At twenty-five minutes of 11 the contractions were 16 per minute, while those of the heart a few minutes before were 48. At twenty minutes of 11 having cut off the left vein it continued to beat the same as the right one; and five minutes after I took out the heart, including about half an inch of the aorta. The right vein ceased beating at fifteen minutes of 12, while the left one averaged 4 or 5 per minute, pulsating *vigorously*; the muscles of the animal being perfectly relaxed and insensible. At the sixth hour of the experiment the same veins pulsated 24—32 per minute; so also the eighth and twelfth hour; how much longer the motion continued I do not know.

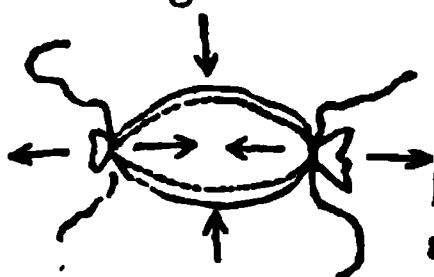
EXPERIMENT VI.—The heart of a *Tortoise* being exposed at five minutes of 11 A. M., pulsated 36 per minute. At three minutes past 11 the pericardium was opened, and the motions averaged 48. They continued the same after trying to excite the organ by galvanism; nor had irritation with a needle any effect on the *frequency* or *character* of its action. Liq. Morph. Sulph. (gr. ii. ad Aq. font. 3i.) was then applied; pulsation 46: the expansion of the auricle and ventricle not becoming so great, alcohol was also applied;† pulsations 48. After these experiments the contraction of the pulmonary veins did not appear to become sensibly affected. At twenty-five minutes after 11, a ligature having been thrown around right vein, (as in Experiment III.) pulsations continued 48. After five minutes this vessel was cut near the ligature, and the contractions stopped for a minute or more, then all at once became powerful, like the auricle, averaging three or four per minute. After a little while they increased to 32, and again became alternately slow and fast, every three or four minutes. At ten minutes from the first, another ligature was applied at *d*, (see *fig. 3*.) The portion thus included continued its motions quite strong, though not as much so as before,

* Bichat, Anat. Gen. tom. i. p. 377, does not admit that veins are very extensible *longitudinally*.

† This experiment shows how careful we should be in *reporting* experiments where we obtain a *negative* result; for in numerous other experiments the action of galvanism, alcohol, &c., have had very decided influence on the contraction of the heart.

averaging 32 per minute. At ten minutes of 12 the section between the ligatures was separated from the body, after which it pulsed more strongly, though of the same frequency.

Fig. 4.



The following figure represents the contractions of the vein after it had been laid on the table, the several motions being indicated by arrows.* At 12 the pulsations were very strong, like those of the auricle, and averaging from 36 to 40 per minute after application of galvanism, having been previously 32.

Nine minutes after this I cut off a similar section of the opposite vein, only one ligature having been applied; which being laid on the table exhibited no motion for five minutes, even after I tried to stimulate it by galvanism, &c. In a few minutes after I left off all attempts to excite it; the vein pulsed at the rate of 20 per minute, then only 3 or 4, and so on alternately. About ten minutes after (the part having become perfectly motionless for several minutes) I could frequently renew the pulsations by galvanic action, so that they became 32 or more, generally averaging, however, from 16 to 24. I could not, however, cause these contractions by irritation with the point of a needle, &c. In order not to confound the mere mechanical irritation of the plates with their galvanic action,† the vein was placed on the zinc, and the circuit being formed, it was gently touched with the other plate; contraction and relaxation of the parts were the immediate effects; the pulsation would generally cease when the plates were removed, but continued some time when suffered to remain in contact. The vein used in this experiment was perfectly *collapsed*, being merely tinged with blood.

The other vein on the table which was turgid with blood at fifteen minutes before 1 p. m. beat 32 *vigorously*; at ten minutes before 3, 28 to 32, at first slowly, then stop a little while, then 28 to 32 per minute, and so on alternately. At fifteen minutes after 4 the pulsations had ceased, but by mechanical irritation would beat as *strongly as ever*! At 8 p. m. all motion had gone and probably for some time. *Thus a section of a vein, taken from the body, pulsed of itself vigorously during the period of 4 or 5 hours, and retained its excitability for about 8 hours!*

EXPERIMENT VII. At half past 10 I kept a half-grown Cat under water for three minutes, till voluntary motion was nearly destroyed. *Heart*, apparently most action in the right auricle, the two auricles being, however, synchronous, consisting of small beats quickly repeated, and a rolling of the whole heart in pericardium. At ten minutes before 12 the superior cava, still pulsating, was tied with two ligatures; the motion still continued. The pulsation did not result from the *locomotion* of

* The diminution of the vein in its contractions in this and other figures is represented by *dotted lines*.

† The silver and zinc plates used in all my experiments formed a single pair, being of a triangular shape, about two inches long and one inch across their base.

the heart for the two were not synchronous and remained though the vein was separated from that organ. The action also continued after the intestines of the animal were torn out, and many vessels wounded so as to afford much hæmorrhage. At 12 the pulsations averaged only one or two per minute; and after they ceased, could be excited mechanically, which was also the case before the vessel had been cut. At twenty minutes before 1 P. M. they were still excitable by mechanical stimuli, and even five minutes after when the section was removed from the body. The pulsation would probably have longer continued had not the vessel collapsed, owing to the blood escaping.

EXPERIMENT VIII. A rat caught by the cat had been apparently dead sometime; on opening the chest, however, the heart exhibited a very slight motion. I applied two ligatures to the inferior cava, and separated the included portion from the body. The section exhibited slight contractions during the period of nearly two hours.

EXPERIMENT IX.—At twenty minutes of 11, I drowned a half-grown *Cat*, which required one minute. The pulsations of the venæ cavæ and pulmonary veins were quite vigorous; but neither synchronous with each other, nor with the action of the heart. At ten minutes of 12 the great vessels of the heart being secured near their roots, they were separated from that organ, and the lungs removed from the body, so as to carry along with them the venæ cavæ and pulmonary vessels. The pulmonary organs being placed under a vessel so as to preserve a proper degree of moisture, the pulmonary vessels continued to pulsate *vigorously* till half past 1 at night, and were still active when examined at ten minutes after 6 next morning; and two hours after could be stimulated to contract by mechanical means. *Thus the venæ cavæ and pulmonary veins pulsated 21 hours after they had been removed from the body!*

EXPERIMENT X.—About two hours after a *Kitten* had been opened, the heart and lungs were removed from the chest in connection with the whole length of the thoracic cavæ. All the vessels were tied at their roots, and the cavæ some distance from the heart so as to remain distended with blood. Notwithstanding, the pulmonary veins for more than *thirty* hours after would contract and relax, when merely touched by the point of a needle; they would cease, however, for a time on being frequently irritated, but regain their excitability, on the stimuli being renewed, after a few seconds. No action whatever could be seen in the venæ cavæ. About twenty hours after the veins had been removed from the body they were observed to contract and relax alternately for an hour or two without having been irritated, which spontaneous action I had not noticed in them before. At the end of twenty-five hours the specimen was shown to my preceptor Dr. Darrach; the spontaneous motion, however, had ceased, though one of the veins could be made to contract and relax by slightly irritating it with a needle. The heart itself (still retaining its blood) continued to beat for a

long time without being irritated, especially the right cavities, and a vermicular motion was noticed in the organ nearly thirty hours, the right auricle being the last to lose its motion.*

Not only have we seen pulsations of the *venæ cavæ* and pulmonary veins in several hundred dogs, cats, birds, reptiles, and fishes, in the young and adult, but in the bullock itself, after the vein was separated from the heart, we have noticed evident contractions of its muscular fibres, which are very evident in this animal,† yet the heart itself was not removed from the body till the animal had been skinned and the abdominal viscera torn out. The intestines themselves exhibited a peristaltic motion and the muscles of the body spasmodic twitches after the carcass had been nearly prepared for market.

In reference to the *venæ cavæ* and pulmonary veins our experiments prove the following points:—

1. That the *venæ cavæ* near the heart and pulmonary veins pulsate in the four classes of the vertebrata.

2. That in dying animals they pulsate long after the auricle and ventricle have ceased to beat.‡

3. That they will also beat even in quadrupeds, for hours, after they have been separated from the heart and from the body.

4. That the distension by blood is not absolutely necessary to their contractile power.

5. That we can stimulate them to contract either when in or out of the body by mechanical and galvanic means, especially by the latter, after all motion has ceased for some time.

6. That after frequently stimulating a vein we impair the contractile power, which, in order to re-excite, it becomes necessary for us to desist our attempts for a time; thus resembling the action of acids on galvanic plates.

* That the auricle dies after the ventricle, seems to have been known to Galen. And Harvey (*de motu cord. cap. iv.*) observes that the *sinus venosus* continues to beat a little time after the ventricle and auricle have lost their motion, and can be renewed when it has ceased beating. See also Wallæus *de motu chyli et sang. epist. ii. at fin.* Bartholini *Anatomie*, pp. 783, 784. Mr. Wilson (*Lectures on the Blood, &c. p. 140.*) considers the apex of the heart and next to this the *septem ventriculi* to be the most irritable.

I have frequently seen the hearts of puppies, &c., when out of the body, beat nearly a whole day, and the motion having stopped for a long time, have continued it for hours by blowing the organ up with air. Cases have been recorded by Wepfer, (*Histor. cicut. aquat. p. 89.*) Brunnerus, (*Experiment circa pancreas, p. 21.*) Peyerus, and Harderus of exciting in dogs, cats, &c., the heart long after it has lost all motion, by merely blowing air through the *receptaculum chyli*, *aorta*, &c.; and Dr. J. K. Mitchell excited the heart of a snapper and sturgeon long after they had been removed from the body, by blowing them up like little bladders.

† Senac, *Traité de la Structure du cœur*, tom. i. 254, and Wallæus *loc. cit.*

‡ Spallanzani and others prove in numerous instances that the blood circulates longer and faster in the veins than in the arteries after the heart has been excited. Exp. lxxx., lxxxi., lxxxiv., lxxxvii., lxxv., lxxvi., lxxvii., civ. May not this be ascribed to the fact stated in the text?

7. That tying a vein and otherwise irritating it will often destroy for a time its pulsations, while they will continue unimpaired in the other vessels.

8. That a vein may contract in a particular part only.

9. That we sometimes see an undulatory movement from one extremity of the veins towards the other.

10. That sometimes by irritating a vein several others will contract simultaneously, at other times only that vein which has been stimulated.

11. That there is a great diversity of the relative order in which the veins pulsate, for instance:—

12. That they may vary in frequency; those of the one side exceeding those of the other.

13. That they may have twice the frequency of the auricular movements.

14. That generally the *venæ cavæ* are synchronous, being followed by the auricle, and then by the ventricles, though they are not invariably so.

15. That the pulsations of the several parts may follow the one immediately after the other, or there may be intervals of some seconds.

16. That the vessels may pulsate a number of times before the heart makes a single motion and *vice versa*.*

17. That the pulmonary veins probably retain their excitability longer than the *venæ cavæ*, though they do not all cease pulsating at the same time.

18. And finally, that it is very doubtful whether the veins possess any sensible contraction like that existing in the *venæ cavæ* and pulmonary veins near the heart, for though viewed for long periods together and with high magnifying powers, (by which I had discovered ciliary motion in the ova of frogs and detected the very cilia themselves,) and though irritated by galvanic and mechanical stimuli, no motion whatever could be detected in them, observations which confirm those made by Haller,† Nysten, and Müller.

* *Quære*. Is the natural order of the pulsations ever inverted in the perfect animal? It is certain that were the right auricle and *venæ cavæ* to contract simultaneously, a much more general pulse would result than what takes place in the inverse order; whether this actually gives rise to the violent pulsation of the jugular veins, &c., in the human system is hard to determine.

† *Innumerabilibus enim experimentis constat, grandes etiam venas, nudas, et suo tumore etiam integram per cutem conspicuas, immutabili demetro in vivo homine viveoque animale persistere. Element. Physiologæ, tom. ii. p. 353.*

Mr. Hastings (op. cit. p. 52, et seq.) maintains that when a bloodvessel is touched by a stimulating substance, a contraction is often produced, though the veins contract less than arteries. The stimuli employed were nitrous and acetic acids, aq. ammoniæ, tinct. lyttæ, sp. turpentine, sat. sol. muriate soda, ice and water of 115° F. For example, oil of turpentine being applied to the web of a frog's foot, the vein began in ten minutes to contract, in twenty minutes became much diminished, and in thirty minutes was impervious. Tinct. lyttæ, in another, produced in half an hour only a slight contraction. Contractions

Indeed, we cannot conclude with Whytt and Broussais that because the venæ cavæ near the heart are decidedly irritable it is probable that the other veins are so; for the veins where they enter the heart are essentially distinct in many points from those in other parts of the system, being decidedly muscular, and the fibres themselves having a distinct termination. The presence of valves in most other veins, and their being under the influence of the muscles prove the termination of the veins, so far as regards their need of contractility, to be sufficiently distinct from their trunks. Indeed in our analogical reasoning we should always keep strictly in view the relative connection which similar organs bear to different parts of the system.

In conclusion, it appears that the alternate contraction and dilatation of the great veins of the heart, must exert a considerable influence in promoting the circulation of the blood, for while the contraction of the vessels urge the blood into the dilating auricles, their subsequent relaxation must in some degree diminish the force with which the blood re-enters them from the contracting auricles, and thus restrict the pulse within just limits. The flow

were produced by nitrous acid in the thoracic and abdominal cavæ, pulmonary, external, jugular, and mesenteric veins.

In ten cases the veins of rabbits' ears contracted by simply irritating them with the scalpel.

It appears from the table that out of 30 experiments 12 exhibited distinct contraction of the veins, 10 dilatations of all the vessels of the web, five of which subsequently contracted by other stimuli. In nine cases no effect whatever was produced.

Admitting the vessels to have contracted in Mr. Hastings' experiments it does not follow that they are endowed with a *vital* contractile power. The stimuli (very painful in their action) were generally applied to the *contractile* tissue of the web of a frog's foot. Hence disturbance of the heart—muscular action, and, as remarked by Hall, contraction or tension of the tissue to which the stimuli were applied—causes sufficient to account for contraction of the vessels. That the contractions of the vessels did not result in all cases from the stimuli, is shown from the fact that generally several minutes, in some instances half an hour elapsed before any contraction took place. And *dilatation* was as frequent a result as *contraction*. In those cases where the *bare* vessel contracted it may have been produced by a chemical action on the vessel itself, or on the fluid, by an endosmosis, as Müller has suggested.

In relation to Mr. Hastings' experiments on the rabbit's ear, it is sufficient to remark that the vessels diminish in diameter without being irritated. Sometimes the ear will be colourless, and a few seconds afterwards filled with arteries, veins, and capillaries forming a beautiful mesh-work. On suddenly disturbing the animal the vessels will be noticed to contract and enlarge, changes which will sometimes take place without any sensible cause. All these phenomena may be explained by the action of the heart.

It must be borne in mind that veins may dilate and *subsequently* contract, owing to reflux of blood from the auricles, &c., which is essentially distinct from a *primary* contraction. And that a *primary contraction* of the vein may result from muscular spasms, from peristaltic action of the intestines and of the ureters, and from pulsation of adjacent arteries; effects which are apt to deceive as to their cause. *We cannot by galvanic or mechanical stimuli cause any contraction whatever in the veins, except in those cases referred to in the text.*

of blood through the veins is undoubtedly assisted by the suction power of the chest and heart* as pointed out by the older anatomists, and revived by Drs. Carson and Barry. Nevertheless, Dr. Barry's theory does not at all explain the circulation through the *lungs*, for the veins, as Wedemeyer remarks, are subjected outwardly to the same pressure which is supposed to act on the blood within them. The action of the veins themselves, however, is considerably assisted by the suction power of the auricle.

Though Dr. Barry shows that the black blood passes through the veins only during the act of inspiration, all his arguments to account for the fact itself are not conclusive. Not to bring forward the arguments which have been urged against the suction power of the chest, I will only reply that the actions of inspiration and circulation of blood to the lungs being synchronous, it does not follow that the two stand towards each other in the relation of cause and effect—for what is the object of inspiration? *to aerate the venous blood*. Hence the necessity of the blood reaching the lungs at the very time the air does the same, but does it follow that the one is necessarily produced by the other?

Notwithstanding the action of inspiration as a cause of the venous circulation is not to be slighted altogether, and Dr. Arnott's objection is a very futile one when he asserts that the veins are pliant tubes, free to collapse, and that no pump can lift liquids through such, for as Dr. Hays, the learned editor remarks, a *vis a tergo* produced by the propulsive power of the capillaries, and perhaps also of the heart, prevents the collapse, the vein is kept full, and at every inspiration, this power is renewed.† On the whole, Dr. Barry's conclusion, that the pressure of the atmosphere is by far the most intense in its degree, the most constant in its influence, and the most unvarying in its amount, that without which the circulation could not be maintained beyond a few minutes, is altogether unsupported by those facts which have been made known in the present essay.‡

* May not the pericardium favour, at least in a slight degree, the suction power of the heart? for while the ventricles contract, a partial vacuum will be produced in the cavity of the pericardium, which must certainly favour the dilatation of the auricles, and roots of the great veins. Certain it is that the pericardium surrounds the heart of all animals, being especially strong in those which have no diaphragm. Haller contends, indeed, that the pericardium is never wanting in man, although in a few cases of it may escape detection from adhering firmly to the heart, cases now and then met with in our post-mortem dissections. It would be interesting to know whether these adhesions have any effect on the free action of the heart. Dr. Baillie, in vol. 1. of Transactions of Soc. for Improv. of Med. and Surg. Knowledge, has published a case of original deficiency of this membrane. It is not known whether this patient exhibited any remarkable symptom about the heart. See also Littre, *Hist. de l'Academie des Sc. de Paris*, 1712, p. 37. These are the only two cases on record.

† Elements of Physics, Vol. 1, p. 456, Phil., 1829.

‡ Inasmuch as the lymphatic hearts, certain veins and other structures are endowed with a *pulsating power*, wholly distinct from mere *contractility of tissue*, I would suggest

ART. III. Reports of five cases of Wounds of Arteries, treated by Compression, with Observations. By T. S. KIRKBRIDE, M. D.

CASE I. Puncture of the Radial Artery, near the Wrist.—J. W. ætat. 30, a carpenter by profession, enjoying good health, punctured the radial artery of the left arm, just above the wrist joint, on the 13th of July, 1838. The wound was made by a sharp pointed knife with which he was working, and although he attempted to control the hæmorrhage, by grasping the upper part of the fore-arm, with his hand, it was still so copious, that the marks of the jets could be seen on the pavement for four or five squares, from the spot where the accident occurred.

A tumour, about the size of a hickory-nut had formed before he arrived at my office, and the blood still flowed in jets. Moderate pressure with the thumb, immediately over the orifice, arrested the hæmorrhage, and by continuing to press firmly upon the part for a few minutes, the thrombus was dispersed.

The patient was anxious to be cured without an operation, and I determined to employ compression. A graduated compress, extending one inch above and below the wound, was placed upon the artery and secured by a roller firmly applied and extending from the fingers to the elbow. The limb was then bound to a splint, reaching from the upper part of the fore-arm, to the distance of two inches beyond the points of the fingers. The hand was directed to be kept in an elevated position.

On the tenth day after the occurrence of the accident, the dressings were carefully removed; there had been no bleeding whatever, the puncture had healed, and the pulsations of the artery below were as distinct as on the opposite side. A compress was again applied without the splint, and four days afterwards he returned to his work. Some stiffness of the joints for a few days, produced by the perfect rest to which the parts had been subjected, was the only inconvenience he ever suffered.

CASE II. Complete division of the Radial Artery at the Wrist.—This accident occurred in the same individual who was the subject of the preceding case. Two weeks after the occurrence of the first accident, he wounded the same artery with a chisel, just above its bifurcation at the root of the thumb. The chisel passed obliquely inwards, forming a flap of the muscles and integuments, and making a complete section of the vessel. The hæmorrhage was arrested by a compress, firmly bound upon the part, but

that we call such a property, *pulstility*, so as to correspond with *irritability*, *contractility*, &c. For when one argues about the *irritability* of certain structures, as the venous radicles, capillaries, &c., it is sometimes hard to know what is implied, whether it be an *alternate* action in the vessels, or a mere *gradual* contraction and subsequent dilatation of the same.

some slight exertion soon caused a renewal of it, and when I saw him, after having walked half a mile, the handkerchiefs with which he had bound up the wound, were completely saturated with blood. Pressure controlled the bleeding, and precisely the same plan of treatment was adopted as in the former instance.

The dressings were removed on the sixth day. The wound had united by adhesive inflammation, and on the following day he resumed his occupation. He has suffered no inconvenience since.

CASE III. Puncture of the Femoral Artery.—A schoolmaster, residing in the northern section of the city, was sitting in front of his desk, along the inclined lid of which his open pen-knife commenced rolling, and, to arrest it in its fall, he drew his thighs together rather suddenly, and unfortunately just at the moment to catch it between them. The blade was forced deeply into the right thigh, puncturing the femoral artery about midway between the knee and groin. A profuse gush of blood followed immediately, and the patient soon became faint. He was seen shortly after, by a highly respectable physician in the neighbourhood, who applied a graduated compress over the wound, and made pressure by means of a tourniquet, with sufficient force to arrest the hemorrhage, without entirely stopping the circulation in the artery.

When Dr. J. R. BARTON saw the patient in consultation, he found him still labouring under all the usual symptoms of a great loss of blood—cold skin, feeble pulse, anxiety of countenance, and great prostration. As the bleeding had entirely ceased, he applied firmly and with great care, a bandage from the toes to the upper part of the thigh, elevated the limb, and caused perfect rest of the part to be maintained. This treatment was faithfully persevered in, for upwards of three weeks. The wound healed, and the recovery was perfect. The patient never suffered in consequence of the accident, and there was no impediment to the circulation.

CASE IV. Bayonet Wound of the Brachial Artery.—S——, a respectable merchant of this city, suffering from near-sightedness, when walking in the street near night, met a person trailing a musket, with the bayonet fixed. Mr. S. walked directly against the point of the bayonet, which penetrated his arm near the axilla, and wounded the brachial artery just below its commencement. He felt the blood flowing down his arm, and also along his body—he became faint, but revived sufficiently to reach his residence. When seen by Dr. BARTON soon afterwards, he was excessively prostrated, his pulse almost imperceptible, his skin cold, and the blood still flowing from the wound. The vessel was not entirely severed. But for his great debility, Dr. B. would have immediately applied a ligature; but, deemed it under all the circumstances of the case, most prudent to defer an operation to a subsequent period, particularly as the hemorrhage was controlled with-

out difficulty. The proper means for exciting reaction were resorted to, and a roller, applied with great care, from the point of the fingers upwards, secured a graduated compress immediately over the wound. An angular splint was bound to the arm by another roller, and the whole secured firmly to the body.

On removing the outer dressings, the greatest care was observed to prevent motion, and the injured part was not disturbed for three weeks from the occurrence of the accident. There was no suppuration, and the cure was perfect. So extensive was the effusion of blood into the cellular tissue, that the discoloration extended along the arm, nearly to the elbow—down that side of the body almost to the pelvis, and from the median line in front, to a corresponding point behind.

CASE V. Complete division of the Radial Artery.—A workman, employed at the Masonic Hall, in this city, several years ago, wounded his arm just above the wrist, and divided the radial artery completely, with a cutting instrument. The hemorrhage was copious, but easily controlled by pressure. Precisely the same plan of treatment was adopted as in the previous cases, and the result was entirely successful. The patient has never experienced any inconvenience from the injury. He was able to resume his work, three weeks after the accident.

Observations.—Wounds of arteries are among the most important accidents the surgeon is called upon to treat; alarming to the patient and the by-standers, they require from the professional attendant, presence of mind and promptness of action. Unskilful treatment exposes the patient to a serious train of evils, if not to loss of life.

Of the five cases above related, two have recently occurred in our own practice, the others have come to our knowledge in the practice of a friend, of the highest standing in the profession. They are not presented with the view of placing compression before the ligature in the treatment of these accidents, or as justifying its general adoption. They possess considerable interest, however, from the variety of vessels injured, and show how much may be effected by the recuperative powers of the system, when judiciously assisted.

We have long been satisfied that many wounds of arteries, particularly those of the extremities, even when in vessels of considerable size, might, under favourable circumstances, be safely and successfully treated by compression. While resident surgeon to the Pennsylvania Hospital, our attention was particularly directed to this point, and the conclusions to which we arrived, were similar to those deducible from the cases we have just reported. In this institution, in which most of the accidents that happen in the city of Philadelphia, are received immediately after their occurrence, and where cases of hemorrhage from wounded arteries were not unfrequent during our

residence, we were surprised to find, in how large a number, the ligature was rendered unnecessary, by the employment of well directed pressure. Whenever we believed the hemorrhage could be controlled by compression, it was invariably resorted to, and out of a large number of cases thus treated, we do not recollect a single one that terminated unpleasantly.

We are perfectly aware that greater facilities for the treatment of such cases exist in the wards of a well-regulated hospital, than can be found in private practice. When, however, the subject is not too fleshy—when pressure can be made directly upon a bone, and there is no peculiarity forbidding its employment upon the entire limb—when the patient is disposed to second the wishes of the surgeon, and where, in fine, the surgeon himself is willing to undergo the trouble and anxiety such cases are likely to give him—when all or most of these circumstances co-exist, compression may be safely tried in many of the wounds of arteries of the extremities.

When called to a case in which the hemorrhage has been completely arrested by compression, or where the patient is excessively prostrated, as occurred in Case IV—where an operation is strenuously objected to, or where the attendant himself may feel unwilling to undertake it, this plan of treatment should have a fair trial, and will often succeed. Should it fail, however, the operation may still be performed, and often with greater satisfaction to the patient, who is then convinced that all other means must prove unavailing.

Where the bleeding is repressed after the accident, its recurrence is very often to be attributed to the careless manner in which the dressings are applied, and the want of that perfect rest, which is absolutely essential to the safe treatment of these injuries. By *perfect rest*, we mean that state of a part in which the patient can neither voluntarily nor involuntarily produce the slightest motion. This state can only be obtained by the use of an inflexible splint, accurately adjusted and firmly secured to the limb.

Perfect rest, important as it is in the treatment of many surgical diseases, may be abused and made productive of unpleasant consequences, particularly to the joints; passive motion enough to obviate this last, may almost always be made at the proper time by the careful surgeon—it should never be entrusted to a patient or to nurses.

Another common cause for the return of hemorrhage, or the formation of aneurism, is the too early or too violent use of the limb, after the wound in the vessel is supposed to be closed; by which means, the lymph not yet consolidated is torn open.

Although what we conceive to be the only fair means of trying compression may be deduced from the treatment adopted in the cases above reported, still its importance will justify some repetition. When called to a case of wounded artery, the first step is to arrest the circulation above the seat of injury, to adjust the lips of the wound accurately, and to secure them with strips of adhesive plaster. A roller of proper width, extending from the

toes in the lower, or the fingers in the upper extremity, is to be carefully and firmly applied as high up as the injury, where it is made to secure a graduated compress, extending a short distance above and below the wound. An inflexible splint, bound to the limb by a second roller, completes the apparatus. Care is to be taken to place the injured extremity in the best position, and if serious bleeding is apprehended, the patient should be carefully watched. This plan of treatment should be persevered in for three or four weeks, and frequently for a longer period. When it is deemed advisable to remove all or a portion of the dressings, it should be done with the greatest care, and without the slightest motion of the injured part. The first movements of this part should be of the gentlest character, and some support should, for a short period, be given to the injured vessel.

If the dressings are well applied, and the limb kept in the proper position, a moderate degree of pressure is generally sufficient to control the hemorrhage—often without materially impeding the circulation in the artery.

Lymph is always effused from the cut edges and coats of the vessel, and if sufficient time is allowed to elapse for its consolidation, we have every reason to hope for a favourable termination of the case. We do not recollect a single unsuccessful case, where this plan of treatment has been faithfully carried out in all its details.

Cases I. and III.—wounds of the radial and femoral arteries—were punctures in which very little if any impediment to the flow of blood was produced by their cure. Cases II. and V. were examples of perfect division, and the cure was effected by adhesion of the sides of the vessel. Case IV. appears to have been of the same character, the artery below being filled by the anastomotic branches. In cases III. and IV., the ligature would have been immediately applied, but from the fact that the hemorrhage was perfectly controlled by the means first resorted to, and the treatment subsequently instituted rendered the operation unnecessary. The subject of the first and second cases, certainly exposed himself to danger by so early a return to his occupation, which was done entirely on his own responsibility.

These cases, then, are facts, illustrating the importance of careful dressings, and going to show that under favourable circumstances, wounds, even of large arteries, may be cured by compression. The particular cases in which it ought to be resorted to, must, after all, be very much left to the tact and good sense of the surgeon, and where doubts exist, it will always be safer to cut down to the vessel, and employ the ligature.

Philadelphia, Dec. 7th, 1838.

ART. IV. *Reports of cases treated in the Baltimore Alms-House Hospital.*

By **SAMUEL ANNAN, M. D.**, Senior Physician to the Institution.

THE wards assigned to the sick women and children came under my management, in the beginning of May; since which time, a considerable variety of diseases has been witnessed; the more important features of which, it is the design of this report to exhibit. Brevity will be studied, as far as it may be thought compatible with clearness and accuracy.

In the early part of May, when the change was making from winter to summer clothing, ophthalmia appeared, and continued to exist, until finally banished by the warm weather of June. The catarrhal and scrofulous were the two most common forms. The former, conjunctivitis puro-mucosa atmospherica, presented all the usual symptoms, of general redness of the eye-lids, and white of the eye; the vessels on the latter arranged in the form of a net work; increased secretion of mucus; with a feeling of roughness, and of sand under the upper eye-lid.

The greater number of these cases were speedily cured by purging, frequent bathing of the eye with warm water, and protecting it from the light by a green shade. In a few instances the temples were cupped, and blisters applied; sometimes to the temples, in other cases behind the ears, and to the back of the neck. The plan of treatment, both general and local, was strictly antiphlogistic; and the diet consisted of vegetables and milk.

It is apparent from the foregoing brief account, that this catarrhal ophthalmia was not violent in its attacks. Indeed this form of inflammation of the eye is seldom so severe as to require bleeding from the arm. Occasionally in robust persons, general blood-letting would appear to be necessary; but for the most part it may be dispensed with. The abstraction of blood from the neighbourhood of the eyes by cups or leeches is often highly beneficial. Mr. Travers prefers the former, and thinks it "has a very decided superiority over leeches." Mr. Mackenzie, of Glasgow, objects to scarifying and cupping the temples, and also to opening the temporal artery, "That they are attended with a greater degree of irritation and pain than simple venesection, and the application of leeches. They also preclude, he says, in many instances, the use of other means, which are likely to be useful; as blisters to the temples and behind the ears. The tight bandage necessary after arteriotomy is also objectionable in cases of ophthalmia, as it produces a degree of pressure, and a development of heat, which are apt to increase the uneasiness of the eye and head."

The application of leeches to the side of the nose, and inner angle of the eye-lids, would appear to draw blood more immediately from the inflamed conjunctiva, than any means applied more remotely; but where leeches cannot be procured, I have never had any hesitation about the application of cups to the temples, or opening the temporal artery. I have never seen

any but good effects follow. The irritation and pain instead of being prejudicial, on the principle of revulsion and counter irritation, should be beneficial; and there is no doubt but they are serviceable, unless the inflammation should extend along the skin to the margin of the eye-lids; which I have never seen happen. If the skin should inflame to the edge of the lids, the irritation would then probably be propagated to the conjunctiva of the ball of the eye, and thus aggravate the symptoms.

It is difficult to perceive how the application of cups, or opening the temporal artery, can prevent the placing of a blister behind the ear. The back of the neck is also still left, and I am not aware that evil consequences result from blistering the surface to which the scarification has been applied for cupping. Neither have I discovered that the bandage used after arteriotomy of the temporal artery, has done harm. My patients have always expressed themselves relieved; and make no complaint against the bandage.

As a topical application, in all the acute inflammations of the eye, I have found nothing afford as great relief as warm water. Bathing the eye frequently, and allowing the warm water to pass over the ball, underneath the lids, and washing out the acrid secretions, has uniformly proved highly grateful. It soothes and relaxes the inflamed membranes, and is sufficiently refrigerant by the evaporation which takes place; while it does not produce that hurtful re-action, which succeeds the cold bath. Cooling lotions are pleasant at the moment of application; but in the large majority of cases, all the symptoms are aggravated by their continued use. In the commencement of some cases, they succeed well, and speedily effect a cure. The same good, however, would result from the warm; and without the risk of that injurious reaction which so often ensues. In severe and obstinate cases of conjunctivitis, I have seen the most striking relief from the excruciating pain, arise from the application of cloths wrung out of hot water, and laid upon the closed lids, as hot as the patient could bear. As soon as they became cool, they were again dipped in the hot water.

A great many physicians are still in the habit of recommending cold lotions in every variety of ophthalmia notwithstanding all the best authorities are opposed to them. They regard chiefly the preternatural heat and redness; and think that cold, to diminish the former, and constrict the dilated vessels, the cause of the latter, must necessarily be exactly adapted to the case. I have known instances, where the physician has refused to allow the patient to bathe the eye with warm water, although assured that the cold increased the pain; while the warm gave ease; and the consequence was, that as soon as he was gone, the patient used that which afforded relief, and disregarded the injunctions of the doctor. There is no therapeutical principle in practical surgery, better settled, than that of the great superiority of warm lotions to the eye, in a state of acute inflammation.

Mr. Mackenzie informs us, that he has been in the habit of treating catarhal ophthalmia with success, on a plan chiefly local and stimulating. Weak

solutions of acetate of lead and sulphate of zinc appeared to be prejudicial; aggravating the inflammation, increasing the sensation as if sand was in the eye, favouring the formation of ulcers on the cornea, or if ulcers be already present, leading to opaque cicatrices; but that a solution of nitrate of silver, from two to four grains to the ounce of distilled water, abated the inflammation, and uniformly relieved the feeling of sand. He applied a large drop once a day to the eye by means of a camel hair pencil. He also employs, as a collyrium, one grain of corrosive sublimate in eight ounces of water. The eye is bathed with this solution, milk warm, and in severe cases, where the discharge is copious and puriform, it is thrown over the whole surface of the conjunctiva with a syringe. At bed time a little red precipitate ointment is smeared along the edges of the eye-lids.

The trials which I have made of this plan of treatment, do not confirm the observations of Mr. Mackenzie. The inflammation instead of undergoing a remarkable diminution, was increased, and all the symptoms were aggravated. There may have been a difference in the cases; although I have taken care not to use it for strumous ophthalmia in any instance, in which he says it is contra-indicated. Climate and mode of living, may render the conjunctivitis of this country, more decidedly inflammatory, than that of Glasgow, and a strict antiphlogistic plan may be more necessary. However this may be, with my present impressions, I am more disposed to trust to it, in the early stages of conjunctivitis, than to stimulants either local or general. I have always found it to succeed in effecting a cure, and generally in the course of a few days.

Scrofulous ophthalmia prevailed to a considerable extent amongst the children of the institution. The redness of the conjunctiva is less intense, in these cases, than in catarrhal ophthalmia; there not being so complete a net-work of red vessels formed. What, however, is strikingly characteristic of the disease, is the pimples or pustules which form upon the sclerotic and cornea. Three or four red vessels converge, and at their point of union, a pimple appears, which soon becomes a pustule, showing this ophthalmia to be an eruptive disease. Beer, of Vienna, makes a distinction between phlyctenulæ and pustules; but as far as I have been able to decide, the only difference is in size. The smaller pimples may be called phlyctenulæ, and the larger pustules. The contents of the former bear more resemblance to serum; the latter are filled with yellowish fluid, which is probably purulent.

In the larger number of cases, I have found the pimples to present themselves upon the sclerotic coat, underneath the conjunctiva, and in the cellular tissue uniting this latter coat to the former. They burst, and discharge their contents, in many instances, and under proper treatment the ulcer speedily heals. Immediately outside the exterior of the cornea is a very common situation for them. When they appear upon the cornea, the ulcer which they form after opening, is apt to extend both in diameter and depth,

and is sometimes difficult of cure; and occasionally it penetrates through the cornea.

Extreme intolerance of light is mentioned as one of the most characteristic symptoms of this form of ophthalmia; and Mr. Mackenzie thinks, that the pustular cases are not attended with so much of this, as the phlyctenular. This may be so, although I can not say I have observed it. I have noticed, that the amount of intolerance of light which prevails, is subject to great variations, in the same class of cases; and would seem to depend, not so much upon the degree of inflammation, or the kind of it, as upon some peculiar condition of the sensibilities of the system; and especially of the eye itself.

No difficulty was experienced in curing all the cases of scrofulous ophthalmia, which occurred the past season. Mild purgatives, salts and tartar emetic, with the plentiful use of warm water, and carefully protecting the eye from the light by a shade, was for the most part, all that was required. A few leeches, got out of a neighbouring brook, were employed; but it was found so troublesome to get them to bite, that but a very limited use was made of them. Imported leeches are only permitted by the trustees of the institution, in what are regarded as extreme cases. Cupping the temples, and blistering, were seldom demanded. Under this treatment, it was surprising how rapidly the eyes improved. In no instance did the disease become chronic, rendering scarification of the inner surface of the eye-lids necessary. Neither were stimulating applications to the eye, nor tonics for the general system, indicated in a single instance, by the state of the ophthalmia. There was but one case of ulcer of the cornea, which came on in a little girl, who was admitted with fever of several days' duration. After her recovery from the fever, the ulcer was touched daily, with a camel-hair pencil, dipped in a solution of nitras argenti, four grains to the ounce. This arrested the ulceration, but did not cause the sore to fill up, and I was about to touch it with a pencil of the lunar caustic, sharpened to a point, when she was removed by her mother.

The most severe and obstinate cases of ophthalmia, which I have had occasion to treat, were the rheumatics (scleritis rheumatica, vel atmospherica) and the catarrho-rheumatica. One case of the former, supervening upon conjunctivitis puro-mucosa atmospherica, was exceedingly troublesome. Venesection, cupping, leeches, blisters, purging, fomentations, calomel and opium, antimonials, opiate frictions round the eye, and belladonna were perseveringly employed during several weeks, before any very obvious improvement took place. For a long time, she experienced more relief from the application of cloths wrung out of hot water to the eyelids and forehead, as hot as could be borne, than from any other remedy. The pain of the ball of the eye and the forehead was excruciating; especially at night. She finally recovered without injury to the eye. In one case of the catarrho-rheumatica, there was a strong tendency to the formation of phlyctenulæ

at the beginning of the attack. The affection of the conjunctiva was, however, soon removed, but the sclerotic inflammation continued for a long time, notwithstanding the most active remedies were employed.

A degree of iritis almost invariably attends rheumatic and catarrho-rheumatic ophthalmia. I have seen permanent contraction of the pupil, with effusion of lymph, producing total blindness, take place where the peculiarities of the disease have been overlooked or neglected, on its first appearance. Calomel and opium, two grains of the former, to half a grain of the latter, three times a day, which speedily affected the system, was found to be of great service, after free depletion, by bleeding and purging. The extract of belladonna, smeared on the eyebrow every evening, by dilating the pupil, and thus removing the pupillary margin beyond the circumference of the lens, which is projected forwards very near the posterior surface of the iris, entirely removes all danger of adhesion of the capsule of the lens to this membrane. And where adhesion has taken place, if not of too long standing, the continued use of the belladonna, for months, will frequently cause so great a degree of dilatation of the pupils, that vision is restored to a very useful extent.

Dysentery.—Above fifty cases of dysentery have been treated, none of which have died; with the exception of two old persons, who soon refused to take medicine, on the supposition that their time of departure had arrived; and one woman, who had been sick a month before she entered the house, and was in the last stage of exhaustion. The treatment in all the new cases consisted of full doses of calomel and opium, followed by castor oil, and this succeeded by Dover's powder. Twenty grains of calomel, with two grains of opium, or fifteen grains, with a grain and an half, were given, and six or eight hours after, an ounce and an half or two ounces of castor oil were administered. The opium very speedily relieved the patient from the dreadful tormina and tenesmus, procuring several hours' ease; while the calomel acted upon the liver and mucous coat of the bowels, especially the latter, promoting secretion, thus depleting the congested vessels, and changing morbid into healthful action. Free evacuations were then produced by the castor oil; by which the morbid contents of the bowels were removed, and farther secretion encouraged. After copious purgation, fifteen grains of Dover's powder, allayed the irritation of the intestinal canal, and acting upon the skin, restored its functional action; and by determining to the surface, assisted in removing the engorgement of the inflamed mucous tissue.

In many instances, this course of treatment effected a cure; and nothing farther was required, but attention to diet. In other cases, the calomel was repeated, followed by the oil and Dover's powder. Sometimes an ounce and an half or two ounces of oil, with forty or fifty drops of laudanum, were given without the calomel, after the operation of which the patient took Dover's powder. The return of the desire to rise to stool frequently, with small, slimy discharges, and tenesmus, was regarded as evidence, that more

purging was required. Free evacuations, by calomel and castor oil, uniformly, for the time, removed the tormina and tenesmus; and the restoration of the functional action of the skin appeared to assist materially in preventing their return.

The first effect of acute inflammation, upon secreting surfaces, is to arrest in a great measure, their natural action; and interrupt the secreting process, by which they are kept moist. We have an example of this, in the dryness of the nostrils, which accompanies a common cold. As soon as copious secretion takes place, the violent symptoms are mitigated, and very great relief is experienced, not only of the local distress, but also of that general feeling of uneasiness, which accompanies disease. This is more especially the case in relation to the mucous tissues; the secretion from which is excrementitious, and requires to be constantly thrown off, to preserve the blood in a state of purity. The animal economy has been so constructed, that it is a law of its nature, to perceive this interruption of functional action, and also to make an effort to restore it; and frequently the unaided exertions of the secretory apparatus itself, are sufficient for this purpose. In many instances, however, these exertions would be ineffectual, and the assistance of art is demanded, to prevent fatal consequences. But art is never more useful, than when it closely imitates nature. In the disease under consideration, it would therefore appear to be a primary indication to restore the functional action of the inflamed mucous tissue, and bring on free secretion. To accomplish this, purgatives are the only remedies, which can be brought to act directly upon the part affected. If we could direct a stream of warm water through the bowels, and thus wash them out, and free them from the acrid matter they contain, and foment the inflamed surface, we should, in all probability, soon produce abundant secretion, and remove the inflammation. But as warm water would be stopped by the way, the stomach rejecting it, and the absorbent veins and lymphatic vessels taking it up, we must have recourse to something we can depend upon to pass through; and it is obvious, that the less irritating it is, the better. Now, all purgatives are more or less irritating; and when we consider that the disease of which we are treating, is an inflammation of the inner coat of the intestines, it would seem rather paradoxical to talk of removing it by irritants. We know, however, from experience, that if we use a mild purgative which will irritate but moderately, while at the same time it promotes secretion, that the discharge from the congested vessels will not only counteract and destroy the effect of the irritant itself, but be of great service in removing the inflammation which previously existed; so that instead of having the inflammation increased, as we might *a priori* anticipate, the free depletion which the vessels are subjected to, will in part, or entirely, remove it.

Calomel and castor oil, we conceive, are admirably adapted to fulfil these indications; and it is on these principles we prescribe them; and wherever they have purged copiously, our patients have been relieved. The more

drastic cathartics no doubt would procure free evacuations; but they would irritate so much, that the inflammation would be increased instead of being diminished. All the fluid which they cause to be discharged, is barely sufficient, where no inflammation exists, to prevent it being set up. Indeed, the probability is, that they always leave more or less of inflammation; but there is vigour of action enough in the vessels themselves, to remove it, after the cause has passed away. While, then, the inflammation of dysentery is diminished by mild purgatives, it is for the most part, rendered worse by the more drastic; and if they are persevered in, ulceration soon appears, and destroys the patient.

Opiates, I am disposed to think, are not employed as freely as they ought to be in this disease. By themselves they will not effect a cure; although they will mitigate at first, some of the most distressing symptoms. In conjunction, or alternating with laxatives, they are invaluable. They give relief from the tormina and tenesmus, which are dreadfully harassing and exhausting; and afford time, between the operations of the purgatives, for the efforts of nature to come in, and endeavour to restore healthful action. There is no one principle of more importance in medicine, than that time should be allowed to the system, to exercise its own balancing powers, for the purpose of restoring the equilibrium of action. The constant exhibition of powerful medicine of any kind, will sooner or later prove irritating; and the great secret in the practice of medicine is, to do just enough to remove the source of embarrassment, and leave nature to accomplish the restoration to perfect health. With this view, after relieving my patient, I am in the constant habit of waiting to see what the efforts of nature will accomplish, prescribing some mild diluent or refrigerant, which I feel confident will not, to say the least, interrupt her proceedings. These remarks are intended for those just entering on practice, with whom *nimia medicina* is the besetting sin.

Ipecacuanha I regard as an invaluable adjuvant in the treatment of dysentery, and in combination with opium, in the form of Dover's powder, it is generally highly serviceable. The quantity contained in ten or fifteen grains of Dover's powder, is as much as the stomach will bear; and the opium assists in restoring the healthful action of the skin, if in no other way, certainly by allaying the intense irritation of the intestinal canal. In many cases, I have found the stomach so irritable, that the Dover's powder produced vomiting. Here opium alone, in the form of pills or tincture, was administered with the happiest effect.

In but few of the cases of dysentery, which came under my notice this summer, has the fever been so high as to indicate the necessity of venesection. Most of them were seen at the beginning of the attack, and immediate relief was afforded. The pulse was somewhat increased in frequency; and the tongue presented various appearances in a small degree; but was not much furred, nor dry, nor red. In a few instances, however, the symptoms

purging was required. Free evacuation for the time, removed the functional action of the their return.

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In a few cases where the disease became decidedly chronic, other remedies had to be tried. The acetate of lead and opium sometimes checked the diarrhoea as soon as was desirable. Two or three grains with half a grain of opium, were given every two, three or four hours, according to the severity of the purging. When the disease began to yield, it was given less frequently. The balsam of copaiba was also tried, and, where it did not disagree with the stomach, produced the most happy effects; arresting the diarrhoea, diminishing the tenderness of the bowels, and preventing tormina. Two drachms of the balsam, with one of powdered gum arabic, one of tincture of opium, or occasionally two, were mixed with three ounces of water, and a tablespoonful was given three or four times a day. Where it produced sickness of stomach, and vomiting, it was exhibited by injection. From forty to sixty drops, with an equal quantity of tincture of opium, made into an emulsion with a drachm or two of powdered gum arabic, and four ounces of water, were thrown into the rectum two or three times in the twenty-four hours. The acetate of lead in the form of injection, sometimes answered a good purpose. Ten or fifteen grains, with fifty or sixty drops of laudanum, and a gill of starch mucilage, were exhibited three or four times daily. The tinctures of kino and catechu restrained the purging very effectually in some cases. In one or two instances, all these remedies were given. It was found necessary to go from one to the other, as the first appeared to lose its power in controlling the disease. Under this treatment, and confining the patient to thickened milk, rice and milk, boiled milk and bread, and weak animal broth, the diarrhoea was arrested, and convalescence took place. The bowels, however, remained irritable during a considerable period; and great caution was required, both as to diet and

exposure. The slightest check of perspiration, or the least imprudence in eating, would cause a return of the purging. The occasional administration of an ounce of castor oil, with thirty or forty drops of laudanum, was of material service in advancing the cure.

Physicians, I suspect, have frequently been disappointed in the effects of laxatives, in consequence of not giving them in sufficiently large doses. Small doses of calomel and castor oil, will do comparatively little good. The treatment recommended by Dr. Brown, in the *London Cyclopædia of Practical Medicine*, would have but little power over the dysentery of this climate. The bleeding and leeching are very well; but "a grain or a grain and a half of calomel, with from five to ten grains of Dover's powder, or half a grain of opium; or five grains of hydrargyrus cum creta, likewise combined with the opiate, may in this country be administered at intervals of four hours, the period being lengthened, when the symptoms begin to abate," would be altogether inefficient in most of the cases we are called upon to treat. It is however due to Dr. Brown to state, that he mentions the practice of the East India physicians, and not with disapprobation. They give scruple doses of castor oil at night, and an oily or saline purgative in the morning, till the dejections become natural and healthy. Dr. Brown's favourite purgative is castor oil. "No more proper laxative," he says, "can be selected, than the oleum ricini, aided in its operation by a mild, tepid, and emollient enema. Some practitioners, he also informs us, think favourably of a solution of neutral salts with which a proportion of tartarized antimony is combined; but it seems doubtful whether the irritating effect of the salt on the intestines, would not counterbalance the benefit likely to accrue from the diaphoretic action of the antimony."

The practice of Dr. Eberle, as given in his work, is "to administer from ten to twelve grains of calomel as soon as possible after the commencement of the disease; and after the lapse of three or four hours, follow it up with an ounce of castor oil, to which twenty or thirty drops of laudanum may be advantageously added." This I consider injudicious practice; 1st. because the dose of calomel is not sufficiently large to make a decided impression; 2d. it is not combined with opium to relieve the patient from the tormina and tenesmus; 3d. the time allowed for the production of its peculiar effects is not long enough; 4th. the quantity of castor oil will not cause free evacuations in many cases; and 5th. it is an error to combine laudanum with the oil, inasmuch as we wish it to operate as speedily as possible, in order to carry off the foul matter dislodged by the calomel.

The facility with which most of the cases I have seen this summer were cured, I think, may be ascribed to their being seen early and the proper remedies administered in full force. The tormina and tenesmus were extremely severe in many of them, but the opium soon removed these distressing symptoms and the patient became easy; time was thus given to the calomel to do its work effectually, and then the oil soon operated, carrying

off the acrid contents of the bowels, and the Dover's powder, which succeeded, allayed any remaining irritation and restored the equilibrium of action. If the disease had been permitted to run on for several days without check, in all probability, venesection, with cupping or leeching, would have been required in a majority of cases. The lancet I regard as invaluable where there is nothing to forbid its employment; and, while my rule is to do nothing more than appears to be demanded by the symptoms, I am willing to acknowledge that in a disease like dysentery, which for the most part is manifestly inflammatory in its character, the abstraction of blood from the arm, according to circumstances, is the safe side to err upon. But it should be remarked, that in the cases of individuals of enfeebled constitution, such as are met with in an alms-house hospital, the propriety and necessity of having recourse to this powerful agent will not be so clear as in private practice, and more especially in the country amongst a robust race of tillers of the soil.

Dr. Eberle is certainly also in error when he tells us that "our object in the employment of aperients in dysentery is simply to evacuate the contents of the bowels." If the views which I have given be correct, there is something more accomplished by calomel and castor oil than merely emptying the intestinal tube. They deplete and diminish inflammation by promoting increased secretion, and thus convert morbid into healthful action. This peculiar property of acting as an alterative I consider of much greater value than their simple purgative qualities. It is because calomel has this power in a great degree and is but little irritating, that it is thought to be so appropriate in this disease.

Phlebitis.—E. B. ætat. 18, was admitted on account of a large swelling of the labia externa, succeeding to parturition. It is about six months since the birth of her child. These tumours were originally examples of that infiltration of blood into the labia, which are occasionally witnessed during or after parturition. Both labia are enlarged, but the left considerably more than the right. No opening was made into them to discharge the effused blood, and permanent tumours have resulted which are extremely inconvenient, by rubbing against the thighs and causing abrasion of the skin.

June 24th. Was bled for pain in the head and bowels by which she was relieved. The skin and subcutaneous cellular tissue around the opening inflamed and slight suppuration took place.

30th. She complained of severe pain in the course of the vein, extending about two inches up the arm, but without constitutional disturbance.

July 1st. The pain had extended an inch or two farther and was much increased on pressure upon the vein; pulse, skin, tongue, and appetite natural. A blister was applied over the inflamed vein, and a bread and water poultice to the opening in the skin.

2d. The soreness has extended up to the axilla and is increased in severity; still no fever. A second blister was applied reaching up to the axilla, and an ounce of castor oil was given.

3d. Pain has reached the subclavian vein, which is sore on pressure; countenance indicates much pain and anxiety; and she occasionally sighs. Pulse 94, soft and compressible; tongue clean and moist. Oil operated once freely, since which has had spasmodic pain around the umbilicus. She was now bled in the other arm to the amount of twenty-four ounces or more; was ordered fifteen grains of calomel; and another blister to be applied over the subclavian and root of the jugular vein.

4th. Pain along the whole course of the subclavian is very acute; thirst great; total loss of appetite; pain of head severe, and countenance expressive of great anxiety; pulse 128, small and not vigorous; bowels not much operated on by the calomel. Was directed to take fifteen grains of calomel.

5th. Pain in the subclavian still very severe, and it now extends up the neck along the course of the internal jugular; other symptoms the same. Having vomited shortly after taking the calomel, fifteen grains more were exhibited, which have operated moderately. The symptoms after this began to yield, and the disease was obviously arrested. The calomel acted slightly on the gums. Antimonials in small doses were exhibited; and emollient poultices applied to the blistered surfaces. The bowels were kept open with laxatives. Considerable tenderness along the entire course of the veins which were inflamed, remained for two or three weeks. Superficial inflammation took place around the opening made by bleeding in the other arm; but it was removed by poultices of bread and water. The cure was complete.

Mr. Liston, in his *Elements of Surgery*, speaks of phlebitis as a very unmanageable disease. He relies upon purgatives and antimonials, and the application of warm fomentations to the part. "General depletion," he says, "is not admissible, unless at the very commencement of the disease, and local bleeding must be had recourse to with very great caution; for by copious abstraction of blood, gangrene may be induced or at least hastened. Blisters, he farther tells us, have been employed, but with no good effect."

Dr. Robert Lee, in the *London Cyclopædia of Practical Medicine*, differs from Mr. Liston. "Our chief reliance," he says, "in the treatment of this affection at the commencement, should be placed on the vigorous employment of local antiphlogistic remedies. Almost all the cases of traumatic phlebitis which have been treated with stimulants have proved fatal. The arm should be supported and preserved in a state of rest, and leeches applied along the course of the inflamed vessel. Their number should be proportioned to the severity of the attack, and their application should be repeated until the inflammation is subdued. This is by far the most important part of the treatment, and the leeches should be repeatedly applied in large numbers. The arm should afterwards be covered with an emollient or saturnine poultice, or an evaporating lotion. Diaphoretics and cooling saline purgatives should also be exhibited."

Mr. J. H. James, in his *Observations on Inflammation*, London, 1832,

says, that "with respect to general treatment when the primary inflammation alone is to be considered, I apprehend, it cannot be too decidedly antiphlogistic; when, from the continuance of the disease or other symptoms secondary inflammation may be suspected, this mode of treatment is more questionable and its results often unfavourable. General blood-letting is certainly a remedy of great efficacy where it is proper, but opinions are much divided on this head; and at all events, when the secondary inflammations are running into rapid suppuration, it is likely rather to expedite the process than prevent it. M. Sanson has treated phlebitis with tartrate of antimony with success; it is at all events a safer mode than bleeding."

These are some of the latest and most respectable of the British authorities; and it must be admitted that their mode of treating this dangerous disease, is sufficiently cautious. With the limited experience I have had, I am not disposed to criticise severely, but I may be permitted to observe that Mr. Liston's fears of local bleeding are certainly unfounded. Dr. Lee places his principal dependence upon repeated leeching, and his recommendation is at least as good as Mr. Liston's. They are all, however, apprehensive of general blood-letting; and none of them speak of blistering. In the treatment of my case I do not suppose that any one of the remedies should have undue importance attached to it. I believe they were all beneficial; and I do not think there is evidence that any of them did harm. It is true the symptoms did not abate immediately after the bleeding; but neither did any considerable amendment take place directly subsequent to the use of any of the other remedies. I am inclined to ascribe as much value to the blisters as to any of the means employed, notwithstanding Mr. Liston's opinion is against them. If fomentations are likely to have any influence upon an inflammation of the inner coat of the brachial or subclavian veins, I should think that counter-irritation by a blister would be much more powerful in its effects. There may, however, be cases, as of persons of very bad constitution, where both general bleeding and blisters may hasten the fatal termination. If the debility was great, and the blistered surface became gangrenous, this assuredly would be the result. One of the chief objections to general blood-letting has not been mentioned by these writers. There would seem to be a peculiar predisposition to this form of morbid action, in the systems of those who are attacked with phlebitis; and the same disease may commence in the other arm after venesection. This had nearly happened in the case narrated. A second attack, in the opposite arm, would greatly diminish the chance of recovery. Still if leeches, which I should much prefer, could not be had, I would, with my present impressions, prefer risking that danger for the sake of the expected benefit.

I had intended to remove the tumour of one if not of both of the labia, with the knife; and she was very desirous to have it done, and urged it, before I thought she had sufficiently recovered from the effects of the phlebitis. But

she was permitted to leave the house, and has probably been prevailed upon to change her mind, as she has not returned.

Syphilitic Ulceration around the Anus, passing into the Rectum, and extending up the Colon. Diarrhœa.—N. D., ætat. about 25. This girl I found in the house when I took charge of the female wards; and I ascertained that she had come in on the 19th of October, 1837, affected with slight diarrhœa; at which time there were small ulcers around the anus, extending within the margin, and of considerable depth. When she came under my care, May, 1838, the ulcers of the anus had healed; but the whole circumference was occupied by chaps or clefts indicative of the former existence of those ulcers called rhagades, which are supposed usually to be caused by the syphilitic virus. She had previously been about two years in the alms-house, and was cured of syphilis. I found her complaining of nothing but the exhausting discharges from the bowels, by which she was greatly reduced. Astringents and opiates were perseveringly employed, and with occasional and temporary mitigation of the diarrhœa; but in spite of all the efforts made for her relief she gradually became more emaciated, and sunk on the 3d of July.

On examination the whole surface of the rectum as high as the promontory of the sacrum, was rough and hard, from the cicatrization of ulcers. These cicatrices were well defined by narrow strips of mucous membrane, separating them from each other, and indicating the extent of each ulcer. With these exceptions, the mucous coat was entirely destroyed, and the cicatrices were formed in the sub-mucous cellular tissue. The muscular coat was thickened and indurated, and by this means the diameter of the bowel was considerably lessened. The sigmoid flexure of the colon, the descending colon, and part of the transverse arch, were partially covered with similar cicatrices, there being portions of mucous membrane, comparatively healthy, interposed. At the upper part of the diseased portion, several ulcers were discovered, from a quarter to half an inch in diameter. These were evidently specimens of the same morbid action, which produced the cicatrices; and there can be no doubt but that the ulcerative process, had gone on progressively from the anus upwards; those below healing, while new ones were forming above. The sensibility of these ulcers could not have been great; as she complained of but little pain. Cups were applied once, to relieve soreness at the lower part of the abdomen.

Syphilis. White Swelling of Knee Joint. Diarrhœa.—M. R. ætat. 22, was admitted, May 10th. Had a chancre on the nympha. The knee joint was considerably enlarged; and puffy and tender around the patella. She first had swelling of the ankle, it then was translated to the elbow, and finally settled in the knee. She was in a state of great prostration, very lean, and her pulse small and feeble. Cups and blisters were applied to the knee, under which treatment it was improving, when she was attacked, the beginning of June, with diarrhœa; and about two weeks after with symptoms of

dysentery. In a few days she was relieved of the dysentery; but continued to be harassed with diarrhoea, sometimes better, from the means employed, and again becoming worse. She lingered in this condition until the 30th of August, when she expired. As her general strength declined, the swelling and pain of knee decreased; and at the time of her death, there was but little enlargement or tenderness.

Autopsy, 18 hours after death. Emaciation extreme. The principal disease was found in the colon and rectum. The mucous and muscular coats of the rectum were thickened and indurated, of a dark red, almost black colour, and nearly the whole surface of this bowel was in a state of ulceration, the ulcers penetrating the mucous and sub-mucous tissues. They were of various sizes, and irregular in shape; some of them cicatrized, and others still open, and burrowing under the mucous coat, which was separated from the muscular at these places. Thickening and ulceration extended up the colon to about the middle of the transverse arch, and nearly the whole surface of the sigmoid flexure, was covered with ulcers resembling those of the rectum. Higher up the greater number of the ulcers were cicatrized. Above the ulcerated parts, and towards the cæcum, there was a number of dark blue spots situated beneath the mucous coat, some as large as a split pea, others not larger than a pin's head. The whole of this part of the mucous coat, above the ulcers, up to the caput cæcum, was thickened and indurated. The small intestines were normal, with the exception of a small portion of the ilium, three or four inches in length, where there was redness, and a small quantity of blood extravasated under the mucous coat. About the cardiac orifice, and along the small curvature, the mucous coat of the stomach was red and softened, and towards the pyloric extremity there was thickening and corrugation, with red patches. Some tubercles were found in the upper part of the left lung, and there was slight redness of the bronchial membrane. The left knee, in which the tumefaction had in a great degree subsided, prior to death, exhibited remains of inflammation of the synovial membrane, principally seated around the patella. This membrane was of a brownish red colour, somewhat inclining to yellow. There was a small quantity of fluid in the joint. On the left side of the patella, there was a depression, of an oval shape, the longest diameter about an inch, which looked like a cicatrized ulcer. On the opposite side of the patella, there was an unnatural roughness of the synovial membrane.

Gastritis. Hypertrophy of Liver. Disease of Kidneys. Thickening of Mucous Coat of Colon. Diarrhoea.—E. G. ætat. about 16, a large, fat, flabby, overgrown girl, of leucophlegmatic habit, was treated for an ulcer of the leg, which healed slowly, and she was discharged cured. About six weeks ago, she again-came into the hospital with dysentery, for which she was treated, and in a short time entirely relieved. Her bowels, however, continued irritable, and she had diarrhoea occasionally. Three weeks ago she was attacked with symptoms of gastritis, tenderness of epigastrium, and

frequent vomiting, with red tongue, burning pain of stomach, and intense thirst. Pulse 135, small and feeble. She was put on iced barley water, and directed to swallow small lumps of ice. An attempt was made to cup the abdomen, but no blood could be obtained. A blister was applied, and tablespoonful doses of a mixture, consisting of one drachm of super-carbonate of soda, one drachm of laudanum, and four ounces of water were given, every two or three hours. Under this treatment the vomiting was checked, and she became much better. Her appetite became good, but as soon as she began to take food, the symptoms of gastritis re-appeared. The diarrhoea returned with augmented violence, and she died September 11th.

Autopsy, 9 hours after death. Considerable fat upon the surface, and about the viscera of the abdomen. Brain and lungs normal. The liver was increased in size about one-fourth, and throughout its entire substance, as well as on its surface, was changed to a bright yellow colour. The kidneys were both diseased; the right one being wholly occupied by cavities, containing a thin greenish fluid, and a calculus the size of a filbert was found in one of the infundibula. The left kidney was beginning to be affected in a similar manner. One or two small cavities had already formed. The mucous coat of the whole of the stomach was soft and pulpy. It could be scraped off easily with the end of the finger nail, and broke when an attempt was made to raise a strip. Along the smaller curvature it was red, and also in the great cul de sac. The mucous coat of the small intestines was in the same state of softening, with some patches of a red colour. The mucous coat of the colon was very much thickened, especially the lower half, and likewise that of the rectum. In some places it was the eighth of an inch thick, and so much indurated as to resemble gristle. The lower half of the large intestines, besides being thickened and indurated, was in a state of ulceration. Long lines of ulceration running nearly in the longitudinal direction of the bowel, from an eighth to a quarter of an inch wide were observed. These ulcers were of a dark colour, apparently tinged with bile, and did not penetrate deeply into the thickened mucous coat. They could be cut off with a knife, and the yellowish indurated mucous tissue was to be seen underneath. Above this thickened part, there was a portion of the bowel nearly normal. The whole surface of the caput cæcum was of a deep red colour, thickened and softened, but not ulcerated.

The disease of the lower part of the large intestines was doubtless an example of chronic thickening and chronic ulceration, and had probably existed for a long time. The sensibility of this part of the bowel must have been so much diminished, and its vitality so much reduced, by the change of its organization, that the ordinary causes of disease must have had but little effect upon it. This we suppose will explain the absence of diarrhoea, previous to the attack of dysentery. The inflammation which produced the dysenteric symptoms, was no doubt seated in the caput cæcum; the acrid secretion from which irritated the anus, and caused tenesmus. If the gas-

tritis had not supervened, the inflammation of the caput cæcum, which had been in a great measure removed, and which had not passed into ulceration, might not have been aggravated, but entirely cured, and she might have lived for a considerable time, notwithstanding the thickening of the lower part of the colon, and of the rectum.

Laryngitis.—Two cases of laryngitis have occurred, and were treated successfully. It exhibited the ordinary symptoms. The thick, hoarse, whispering voice, cough and dyspnoea, with tenderness or uneasiness in the larynx, and great anxiety of countenance. They were both bled freely from the arm. Leeches were applied to the neck in one case, and the external jugular vein was opened in the other. Purgatives were administered, and antimonials, to the extent of causing nausea, and blisters were applied to the throat. The vapour of boiling water was inhaled, and the throat frequently gargled with tepid water. As the disease subsided, calomel and opium were given. This is a disease which runs its course to a fatal termination, with extreme rapidity, if relief is not early afforded, and it is greatly to be regretted that there is so much difference of opinion amongst our best writers, as to the most effectual mode of arresting it in its progress. Blood-letting has been the chief remedy relied upon by some physicians, and enormous quantities of blood have been abstracted, and notwithstanding, the patient has died. Dr. Armstrong mentions a case, where one hundred and sixty ounces of blood were taken in six hours, and the patient died within twenty-four hours. General Washington lost eighty or ninety ounces in twelve or fourteen hours. On the other hand, Dr. Francis of New York was bled to the amount of 152 ounces in five days, and was cured; and Sir John Macnamara Hayes was bled, in his first attack, three times, and each time with manifest relief. In his second attack, however, he was again three times bled, but the disease proved fatal. This and other cases induced Dr. Baillie to affirm, that “venesection, even when employed strenuously and early, was of no real use.” Dr. Armstrong says, that “blood-letting exercises upon the whole less influence over this than over any other form of inflammation.” He nevertheless considers it “an useful auxiliary in the treatment.” Dr. John Cheyne thinks “that blood-letting will be more clearly indicated in youth than in age; and that we may bleed with most hopes of success when the symptoms of inflammatory fever are most evident.”

Both my patients were young, but the symptoms of fever were not very evident. They were both bled freely from the arm, to the extent of twenty-four or thirty ounces, within twelve or eighteen hours of the appearance of violent symptoms; but I cannot say that either of them appeared to be much relieved. Sir J. M. Hayes was not bled in his second illness, till the second day. This I conceive made a material difference in the prospect of relief from the remedy. The great danger in laryngitis proceeds from the effusion of serum into the cellular tissue, beneath the mucous membrane; and although bleeding will doubtless have considerable power in giving a check

to this effusion, and may prevent more serum from being poured out, it cannot remove immediately that which is already effused; and if the tumefaction from this œdema has once reached a certain point, viz. that at which a sufficient quantity of air cannot be admitted to oxygenate the blood, this fluid, thus imperfectly decarbonized, will soon weaken the vital powers so as to render recovery impossible. Hence although I did not expect my patients to have their breathing instantly made easier by venesection, (this I knew was to be the work of the absorbents, by removing the effused serum,) I nevertheless hoped and expected, that I should thereby prevent any increase of the œdema, and consequently of the dyspnœa. I was therefore not disappointed when I found the laborious respiration continue. I did not, however, think it necessary to repeat the bleeding from the arm on that account, and I did not wish to debilitate my patients more than was absolutely necessary; but considered it very important to suffer them to retain their nervous and muscular power in order that they might struggle successfully against the obstacle to the introduction of air into the lungs. Having as I thought, abstracted as much blood from the general system as would give a check to the tendency to the farther effusion of serum into the sub-mucous cellular tissue, I next directed my attention to those remedies, which, while they would not greatly increase debility, would diminish inflammation, assist in preventing an increase of the œdema, and promote the absorption of the fluid already effused.

Immediately after the bleeding the neck was fomented, the vapour of boiling water was directed to be inhaled, the throat and mouth were frequently washed out with warm water, and twenty grains of calomel were administered. In all the acute inflammations of the fauces, larynx and pharynx, I regard frequent gargling with warm water as one of our most valuable remedies. It is a powerful adjuvant in diminishing pain and promoting secretion. There being no decrease of the symptoms, leeches were applied in the one case, and the jugular vein opened in the other, after three or four hours had elapsed. Where the leeches can be procured, leeching is to be preferred. The external jugular, it is true, receives veins from the front of the neck, which no doubt have a communication more or less direct with the larynx; but more blood will in this way be drawn from the general system, and a smaller proportion from the part affected. Antimonials were also exhibited, so as to produce nausea; taking care not to excite vomiting. They were expected to assist in keeping down the action of the heart, and promote the absorption of the fluid already effused.

The propriety of vomiting in these cases, is one of those disputed points to which reference has been made. We are told by Dr. Armstrong, in his lectures, that the first thing is an emetic. He says, "I have more faith in antimonial emetics in laryngitis, than in any other remedy taken singly, if they are given so as to produce full and free vomiting." On the other hand, Dr. Cheyne tells us, that "emetics aggravate the danger; and that after

bleeding to forty or fifty ounces from the arm and by leeches, or cupping the back of the neck, he would give the patient a powder containing two or three grains of calomel, three or four of pulvis antimonialis, and one-half or one-third of a grain of opium, every third or fourth hour till the gums became affected." "This powder," says he, "we prefer to an exhibition of tartar emetic, not wishing to expose the patient to the danger of vomiting, which is productive of a frightful struggle in laryngitis." In support of his practice, Dr. Armstrong relates a case of a woman on the point of being suffocated in acute laryngitis. Her voice was suppressed, and she pointed repeatedly to the seat of her distress with her finger. He gave her a dose of antimony and ipecacuanha; and after vomiting she spoke distinctly; and the next morning when he saw her she was perfectly convalescent.

Notwithstanding the high authority of Dr. Armstrong, I unite with Dr. Cheyne in his opposition to vomiting in acute laryngitis. If our present views of the pathology of the disease are correct, and the chief danger arises from the effusion of serum into the sub-mucous cellular tissue, one would suppose vomiting would be, to say the least, a doubtful remedy, as to the probability of benefit; and not unaccompanied by danger, even if the relief was more certain. In croup, where the dyspnoea is partly caused by the effusion of mucous and lymph, upon the free surface of the larynx, which can be dislodged by vomiting, and the passage thus to a certain extent cleared of obstruction, there is a certainty of more or less advantage; but in laryngitis, the effused fluid being beneath the lining membrane of the larynx, it is manifestly impossible to force it up into the fauces, and have it thrown out of the mouth; and it is therefore plain, that the tube cannot in this way be made more open. It is also evident from the frightful struggle which frequently attends the act of vomiting in these cases, that spasm of the muscles of the larynx is brought on, which threatens a complete closure of the rima glottidis, and might be productive of fatal consequences. Crippled as these parts are, by the congestion of their blood-vessels, and the effusion of serum around the fibres, and between the tissues, it is not surprising that irregular action should be brought on by the violent motion caused by vomiting. How then, it will be asked, was Dr. Armstrong's patient relieved? I can see no other mode than this: viz. that the prodigious effort made in order to keep open the rima glottidis, and support respiration, had forced a portion of the serum to change its position, and be diffused amongst the parts around, thus diminishing the tumefaction of the glottis, and consequently enlarging the opening. But it would appear from good authority, that there is no certainty of relief being thus obtained in all cases; and the struggle is so frightful as to deter good practitioners from having recourse to this remedy. I am, therefore, inclined to rely upon the other means in our possession.

My next remedy was a blister, covering the whole front of the neck, and going two-thirds or three-fourths round. Here I have both Drs. Armstrong

and Cheyne opposed. The former says, "that blisters are useful when the inflammation has been rendered chronic, but not till then;" and the latter tells us that "blistering the neck is of very questionable efficacy, and by the inflammation, stiffness, and soreness which it occasions, adds much to the sufferings of the patient, and, when bronchotomy becomes necessary, to the inconveniences which attend that operation. If the physician reposes much confidence in the antiphlogistic power of a blister, let it be deferred till bleeding has been carried as far as is expedient, and then let it be applied to the upper part of the sternum."

Dr. Armstrong's opinion, even unaccompanied by reasons, is certainly entitled to great respect, but he is not infallible; and I confess I cannot understand how that counter-irritation which is said to be serviceable in chronic laryngitis, should not prove beneficial in the acute form of the disease. It will not be asserted that the blister will increase the fever so as to counter-balance the good to be derived from the external irritation. The fever has been reduced by the previous treatment; and observation shows that no such increase takes place. The blisters were thought to have been of material service in the two cases narrated above.

Dr. Cheyne gives us reasons for questioning the efficacy of blisters, but they do not appear to me to have any great weight. Some pain has certainly to be endured, but not greater than from the application of a blister to many other parts. I have not heard of any complaint of extraordinary suffering; but on the contrary, whenever the breathing is relieved, the pleasure is so great that all other kinds of uneasiness appear insignificant. Where the skin lies so close to the organ affected, and the counter-irritation can be brought to bear so immediately upon the part diseased, I should expect much benefit; and I think, unless I am greatly mistaken, that observation will sustain this opinion. Inflammation will be diminished and absorption promoted.

With respect to Dr. Cheyne's objection, that bronchotomy will be rendered more inconvenient, I do not perceive its force. This operation may be somewhat more painful to the patient; but we surely ought to employ, in the first place, all possible means for avoiding the necessity of an operation, and not be deterred from doing all in our power for the cure of the patient, from the dread of some little additional difficulty in the performance of an operation, which after all may never be required. I do not imagine that the difficulties will be augmented, and I suppose most persons would prefer taking the chance of being cured by the blister, to preserving the neck free, that a little less pain might be experienced from the operation, should it unhappily become indispensable. I have therefore no hesitation in recommending blisters as an important part of the treatment of acute laryngitis.

After the first violence of the disease has been subdued, I have thought that benefit was derived from small doses of calomel and opium, so as slightly to affect the gums. A full dose of calomel should be given early

in the attack, to be followed up by castor oil or salts, if it has not the effect of purging freely; but towards the conclusion, or when the dyspnoea has been considerably lessened, the constitutional effects of calomel will expedite the complete restoration to health.

In the winter season it is very important that the temperature of the patient's apartment should be kept as high as 60 deg. of Fahr. If he breathes a cold air, it chills the skin and aggravates the inflammation.

One case of prolapsus uteri has been admitted. She had been affected with the complaint during eighteen months. During the last six months the whole uterus had been outside the vagina, and the os uteri was ulcerated all round the opening. I returned the uterus to the vagina, put on one of my trusses, and the next day she went to work, and has not since made any complaint.

ART. V. *On Apoplexy and Palsy*. By ALEXANDER SOMERVAIL, M. D.,
of Essex County, Virginia.

IN January, 1786, I first saw a case of apoplexy. The subject was a man in easy circumstances, ætat. about 60; he lived as such gentlemen in this part of Virginia did in those days—a full table, spirit and water before and after dinner, more or less, perhaps a mint julep before breakfast, seldom coming near intoxication. The evening before his attack he was very much intoxicated, even to insensibility. Next morning he was suffering as usual in such circumstances, nausea, vomiting, vertigo, headache, &c. After some hours in this situation apoplexy came on and terminated in coma, in which condition I saw him, about an hour from the attack. He was bled and a blister applied to the head. In two hours another physician came, he was then bled more largely, the coma continued till next morning when he died.

In November, 1787, a gentleman, ætat. about 35, a full liver, and for a few years (two or three) a hard drinker, chiefly rum and water. His custom was when the desire for drink came on him, to drink, in company or by himself, to complete intoxication, and keep that up day and night till he became sick, with vomiting, and all the horrible feelings usual in such situations; then to call on me under the dread of a fit and death thereby. When thus suffering a fit came on; I was present and bled him; he recovered so as to walk about next day, but that night he died.

In June, 1800, a man, ætat. about 60, among the working planters, a very large frame, full of flesh and blood, but not corpulent. With his manner of living I was not acquainted, but have no doubt he used a full allowance of meat and bread, with cider and brandy. He had palsy of one side

a few days; his pulse was large and full, by far the largest artery I have ever felt. I thought there could be no mistake in bleeding him, which I did, gave a purgative and blistered. He died in two days.

From these and some other cases I began to doubt the propriety of the depleting plan; in particular the coming on of apoplexy after the stimulus of spirit had subsided, and the opposite state had come, and I have also heard of similar cases on good information, and of late years. I thought the disease consisted in the suspension of the nervous power from over excitement, and time was required for its reproduction from the arterial system.

In 1804, a lady, *ætat.* upwards of 70, and for many years in good health, and a near neighbour, when finishing a hearty dinner, fell from the table speechless, her face drawn to one side. I was soon there, found her vomiting; I gave, with difficulty, a solution of sulphate of copper, which emptied the stomach effectually; she was relieved, lived seven years and had no return.

In 1807, a middle-aged man in poor circumstances lost the use of one side. I gave him the muriated tincture of iron, he took ten drops every two hours until six ounces were taken; he recovered entirely. Died from fever in 1815; no return of palsy.

Since that I had an aged mulatto woman, with palsy of one side. She had been cook in a full living family, and corpulent. The tincture of iron, I believe, was given to her faithfully, but had no effect.

In October, 1812, a gentleman, *ætat.* 66, tall and spare, a hearty eater, a great smoker, used a little spirit every morning before dinner, and in the evening, and had long been in good health; was a member of congress from Kentucky, was passing the interval between the sessions with his friends in Virginia, and made his home with his brother, who was a near neighbour. They were together at a friend's, near twenty miles off, where he was taken with palsy; he came home with his brother where I was present. After getting him in bed, his brother, being an esteemed physician and friend, asked me to bleed him; to this I objected, endeavouring to show the injurious consequences as already mentioned, and proposed an emetic and cathartic followed with the muriate of iron. This was assented to and instantly executed. Next day the relief was manifest; he began the muriate and continued it through the winter. He was able to walk in about a week; went to the meeting of congress, and after the 4th of March returned to his family in Kentucky. He died in 1832 from old age; no return of palsy.

This summer while reading the *Life of Sir Walter Scott*, by J. G. Lockhart, I was surprised to perceive the old system of bleeding and starvation applied in all its force with partial relief; but the system giving way, the disease returning every time worse, and returning sooner. While reading this I received a letter from my brother giving an account of a slight attack in himself, treated exactly in the same way. This made me attend more particularly to Sir Walter's case. He was a full liver, a large drinker, but

nearly incapable of intoxication, a powerful frame of body and mind, capable of great exertion, and these powers in constant use, and very often to the utmost stretch. While health continued the daily waste was well supplied. But the time came when mental distress (as is customary) impaired the digestive powers, producing changes on the ingesta and secretions in the alimentary canal, thereby irritating the nerves of these organs; these radiated to the head, &c., producing the complaints in question or others of a complicated and distressing nature. Then began bleeding, &c., as there recorded.

It appears to me that apoplexy and palsy are not produced by increased arterial action; but, as far as the blood is concerned, it is retained in the veins from a diminution of nervous power; that want of nervous energy is the disease. This comes on suddenly; like a muscle in contraction receiving a small stroke, it instantly becomes powerless, and time is required to restore it. I suppose the nervous power is derived from the blood and respiration. Leucophlegmasia is accompanied by feebleness and want of energy; the blood is not arterialized; healthy blood is necessary to nervous energy; and though there may be too much blood there may also be too little. The healthy standard should be maintained by a diet suited to the digestive powers and the necessity of the system. When these powers are diminished much less should be taken in than they can manage and no more should be received until that already taken is fully disposed of. Instead of this, all was taken away from Sir Walter at once and kept away. Wine and spirit were properly forbidden; but the want of nourishment, from so abstemious a course, produced a loss of muscular power and emaciation, and again indigestion and a more severe attack, and so repeatedly, until by the transfer of continual irritation (from irritating substances in the alimentary canal) to the brain, organic lesion was formed there, and death followed.

In spring, 1771, my father had his children inoculated with small pox; my youngest sister, a year and a half old, was breaking out very full; she was carried out on a cold windy day and kept out a long time; when brought in she was cold and colourless; the eruption had disappeared and never returned. She was paralytic, could neither speak nor move. Of all this I have a distinct remembrance. After a time, some weeks, her speech returned suddenly, and she recovered. She died from croup in 1775, but as long as she lived her right arm often fell powerless by her side, and was restored again. I suppose a deleterious substance was absorbed in this case, depriving the nerves of their energy, and when expelled, the power returned. The poison of wine or spirit suspends the nervous power for a time, as far as sensation and motion are concerned.

ART. VI. *Successful Ligature of the Subclavian Artery.* By G. H. WHITE, M. D., of Hudson, New York.

On the evening of the 3d day of last September, a rencontre took place between Mr. Taylor, a stout muscular young man, residing in Saugerties, Ulster County, New York, and one of his neighbours. In this affray Mr. T. received a stab forward of the left shoulder, which wounded the upper portion of the axillary artery, and nearly terminated his life before surgical aid could be obtained. The hæmorrhage, however, was arrested by strong compression.

On the 4th day after the occurrence, it was evident that an aneurismal tumour was forming, but from the extreme tenderness and swollen state of the parts adjacent, some delay was deemed essential to the safe performance of so intricate an operation as would be requisite in his case.

On the 17th of September, just two weeks from the time of the injury, the tumefaction having subsided, a large pulsating tumour presented itself, pressing hard against the clavicle, and on the point of bursting. The patient was now placed upon a suitable table, with the head and shoulders somewhat elevated, under strong light, when, assisted by my father, Dr. S. White, and Drs. W. C. and A. B. De Witt, I proceeded to the operation of dissecting down, above the clavicle, and tying the subclavian artery, at the point where it emerges from between the scaleni muscles. The shoulder being much elevated by the pressure of the tumour, he drew the skin firmly down and commenced the first incision about one inch from the sternal end, extending it three inches on the upper margin of the clavicle, thus dividing the skin and platisma myoides. From the inner point of this incision, one of an inch and a half was made on the outer edge of the mastoid muscle. This triangular flap being raised, the further dissection was completed without wounding any important muscle, till the artery was exposed, lying nearly under one of the large cervical nerves. A silk ligature was now passed under the subclavian, with the Philadelphia needle, and the artery was firmly tied, when all pulsation in the tumour ceased. One small artery required a ligature during the dissection, with the loss of about four ounces of blood. The wound was closed with sutures and adhesive straps. The pressure being great upon the tumour, a puncture was made with a lancet, and a small portion of the coagulated blood suffered to escape, to the great relief of the patient.

On the 4th day after the operation the pulse returned at the wrist. In one week the tumour had nearly subsided. On the 17th day, the ligature came away; and in three weeks the wounds were healed, and the patient was restored.

When we call to mind that it is but twenty-one years since the operation of tying the subclavian artery, in this or any other country, was first success-

fully performed, by the late Dr. Post of New York; and consider the many difficulties attending this case; in the language of the attending physicians, it may be pronounced, "a splendid triumph of surgery over disease and impending death."

Hudson, December 1st, 1838.

ART. VII. Contributions Illustrative of the Functions of the Cerebellum.
By JOHN D. FISHER, M. D., of Boston.

SOME of the facts stated in the following communication have a bearing on the physiology of the cerebellum.

The office which this portion of the encephalon performs in the animal economy, has of late years engaged the attention of physiologists, and has been made a subject of much discussion. Theories have been advanced, experiments on animals have been performed, symptoms have been noted, and pathological observations have been made by various individuals with the express object of determining this interesting question, and it still remains a matter of speculation and of investigation.

Three different functions have been attributed to the cerebellum by as many classes of writers.

One class maintain the doctrine that this organ is the regulator of the movements of locomotion; a second, that it is the centre and source of sensation; and a third, that it is the organ of the instinct of reproduction.

The advocates of each of these theories will read the following details with some degree of interest, and the followers of the founder of the new theory of cerebral physiology, and of mental philosophy will not fail to summon some of them as proofs of their adopted doctrine.

Case I. Pneumonia. Absence of Testes. Cerebellum of small size. D. O. ætat. 45, book-keeper, intemperate. Health gradually declining for two years; has had derangement of digestive organs with organic disease of liver. First seen a few hours before death; was lying on sofa; skin yellow, pulse quick, small; respiration short and frequent, accompanied with cough, and an expectoration of dark thick foetid sputa; thorax superficially examined, gave usual resonance on left side; on right from clavicle to nipple flat, below quite natural; respiration audible in left lung, front; in right, vesicular murmur could not be heard from clavicle to near nipple, but was replaced by bronchial respiration and mucous ronchus; in lower part respiration distinct with fine mucous or crepitous ronchus, resonance of voice loud and sharp, sound seeming to be immediately against the ear; rest of chest not examined, the intention being to re-examine the whole carefully at next visit. Expec-

torant mixture, mild cathartic; stimulant poultice to chest in front. Patient objected to cathartic, and remained upon sofa till 10 P. M. when it was proposed to apply poultice; he arose for this purpose; walked to the fire; complained of faintness and was led back to sofa when he laid down, gave a single gasp and died.

Autopsy, on the following day. Stature above the common size; body well formed and of good proportions; limbs round and rather plump. Skin everywhere yellow; features shrunken; face smooth, not presenting the slightest appearance of whiskers or beard. Left arm, lower part of abdomen, penis, scrotum and upper part of left thigh discoloured, exhibiting marks of severe bruises occasioned by a fall a few days before death. Skin of pubes and scrotum without hair, except a few scattering ones. Penis small, resembling that of a boy ten or twelve years old: scrotum contracted in size; no testicles could be felt. Left chest natural on percussion, but upper part of right front, side and back, completely flat. Abdomen soft and yielding except in region of liver, the edges of which could be distinctly traced by the hand. On opening the thorax, right lung not collapsed, completely filled right cavity; left lung slightly collapsed; lower lobe of latter adherent, probably from old inflammation; substance of organ healthy, crepitating under pressure; colour somewhat more livid than natural, but on incising it no frothy or sanguineous fluid flowed from it as is usual in a lung inflamed to the first degree; no pitting upon pressure; elasticity natural; mucous lining of bronchi rather redder than natural, without thickening or softening or the dotted appearance of inflammation. Right lung not adherent, much larger in appearance, heavier and more dense than left, particularly upper lobe, and of a dark livid colour. The upper portion presented a perfectly smooth surface like that of the liver and was hard and inelastic to the touch with exception of a small part of anterior inferior edge, an inch in length, and half an inch in breadth, which was somewhat softer and crepitating. Middle and lower lobes permeable to air, and crepitated under fingers, retaining, however in a slight degree the indentations made by them. On making an incision from apex to base, a striking difference of structure was exhibited, the upper lobe cutting like liver, yielding no blood or fluid, while from the lower portions, there flowed a considerable quantity of frothy and bloody fluid. About one third of upper lobe exhibited all the characteristics of red hepatization, while the two lower thirds were in the third stage, or grey hepatization. The line of demarcation between the two degrees of inflammation, was strikingly distinct. The incised surface of upper third of this lobe was of a dark red colour, granular, hard and not easily broken down by the fingers; when torn, granular aspect very evident; the remaining portion of this lobe was of a pale yellow or straw colour especially inferiorly; it was solid, hard, less so however than superior part, and dry on incision; it was also more easily lacerable, and more disorganized. The middle lobe was congested but not hepatized; lower lobe

of healthy aspect. Mucous membrane of bronchi red; this redness decreased on descending to lower lobes; pleura free from any traces of recent disease. Pericardium natural, containing rather more than usual quantity of fluid. Heart rather larger than common; left ventricle slightly hypertrophied and dilated. Aortic valves indurated; many small cartilaginous points of the size of pins heads existed in the inner surface of aorta just above the valves. Liver large; externally and internally of a light grey colour, indurated and granulated throughout. It was as hard as, and cut like cartilage, grating under the knife, and resounding when struck. When torn, the granular structure was finely displayed, the grains appearing nearly as large and coarse as small shot. Gall-bladder contracted, containing a little imperfect bile. Other abdominal viscera free from any peculiar disease: the examination, however, was not thorough for want of time, and as attention was more particularly attracted to the genital organs.

On carefully examining penis (which as was stated, appeared very small) - the prepuce was found covering the glans, and seemed as if it had been seldom or never retracted; in fact the glans was with difficulty made to pass through it, the aperture being so much contracted. When exposed it was pale, small and pointed, and the urethra of exceedingly small calibre. All the parts of the organ resembled perfectly those of a boy not yet arrived at the age of puberty. The scrotum was soft and flabby; it contained no testicles, but it was thought that the spermatic cord could be felt at the upper part. An incision was then made, commencing at the inguinal ring and extending to the lower extremity of left side of scrotum. The skin, the dartos, and the tunica vaginalis, were of a natural appearance, but no testes nor any bodies of a glandular nature existed in the scrotum. In the upper part of the left tunica vaginalis, the spermatic cord was discovered extending into its cavity about half an inch, and terminating abruptly in a point of a semi-lunar shape. The cremaster muscle was seen extending in numerous small fibres beyond the terminus of the cord which spread themselves out upon the tunica vaginalis. The cord itself was much smaller than is usual in adults. The vas deferens was properly formed and nearly of natural size; its cavity terminated in a cul-de-sac at the end of the cord. The arteries and veins were exceedingly small, hardly distinguishable. The right side of the scrotum and the right spermatic cord differed in no respect from the left except that the latter extended to the bottom of the scrotum and turned upwards a quarter of an inch. So far as they were traced into the abdomen they presented no other peculiarities. Circumstances prevented examination of the *vesiculæ seminales*; it is therefore impossible to say whether they existed or not. From the perfect condition of the vas deferens, it is presumed they did exist, and might have been found.

The history of the individual, the absence of the testes and other circumstances, having brought to mind the doctrines of phrenology in relation to the functions of the cerebellum, the examination was extended to the cra-

nium and its contents, with a view to testing the truth of these doctrines. The size of the head was found by measurement to be as follows, viz. 22 inches in circumference from the middle of the forehead over the crucial ridge of occiput : 16 inches from the orifice of one ear to that of the other over the highest point : 6 inches from mastoid process to mastoid process, and 8 inches from ear to ear. The head, therefore, was a large one. On opening cranium and removing brain, it was found to be in a healthy condition, and of large size—but the relative proportion of the cerebrum to the cerebellum was strikingly unnatural; the latter being comparatively exceedingly small. Upon weighing the encephalon, comprising the cerebrum and cerebellum on the day following, it was found to weigh $51\frac{1}{2}$ ounces—or 3 pounds, $3\frac{1}{2}$ ounces avoirdupois. The cerebrum alone weighed 47 ounces. The cerebellum alone weighed $4\frac{1}{2}$ ounces. The weight of the cerebellum to that of the cerebrum was therefore, as 1 to $10\frac{1}{2}$ within a fraction. The cerebellum measured in its transverse diameter 4 inches, in its antero-posterior diameter $2\frac{1}{2}$ inches, and in thickness $1\frac{1}{2}$ inch.

According to Meckel and others the average weight of the cerebrum and cerebellum united is 3 pounds, and the weight of the cerebellum to that of the cerebrum as 1 to 7 or 1 to 8. Its usual measurement being in its transverse diameter 4 inches, in its antero-posterior diameter $2\frac{1}{2}$ inches, and in thickness $2\frac{1}{2}$ inches. The cerebellum, therefore, in this person was one-third less in size and weight than is naturally the case in an adult male—and was of the exact weight of that of a female child six years old, who died and whose cranium was dissected at the same period.

The history of the patient who forms the subject of the preceding case, furnished by a near relative, is of much physiological interest. He was born in 1791, and was therefore 45 years of age at the time of his death. The late Dr. Warren discovered the deficiency of testes soon after birth, and observed that he would probably prove to be a natural eunuch. He grew up to the age of puberty without exhibiting any peculiarities distinguishing him from his fellows, except the non-appearance of the testicles. From the age of puberty to the age of twenty-five, and even to the day of his death, he presented the following peculiarities. His voice remained unchanged in its tone, which was decidedly effeminate. He was fond of music and sung with much taste and effect, but always in treble and in concert with females. After the age of 25, however, it became grave, and he could no longer accompany female voices with ease. He had no beard, and was never known to shave. He never exhibited any amorous propensities or desire for female society. Although of a social disposition, he was very shy in company with females of his own age, and always approached them with evident timidity. He was extremely guarded in his expressions before ladies, and often reprimanded his associates for using in their presence language in the least degree expressive of an indelicate or amorous sentiment. When about 21 years of age, he became acquainted with a number of young

men fond of pleasure and frolic, and by degrees acquired a taste for the inebriating cup, but during the many scenes of dissipation in which he participated, he was never known to visit a house of ill-fame, or to address any of the numerous ladies of pleasure who walked the street. In short, he was, as his mother expressed herself, "a virgin in feeling and conduct to the day of his death."

The facts presented by this case, or some of them at least, are peculiar and instructive. They shed some light on the subject of cerebral physiology, and support the opinion, that a certain connection exists between the cerebellum and the function of generation.

The coincidence of the imperfect development, or diminutive size of the cerebellum, with the natural and entire deficiency of amorous propensities and sexual desires, which was a remarkable feature in the case, not only favours this notion, but also tends to strengthen and to establish the doctrine that the cerebellum is the organ of the instinct of reproduction. This is evidently the only legitimate conclusion to be derived from the phenomena which characterized the case. Certainly no proof can be drawn from them confirmatory of either of the other theories respecting the functions of the organ. On the contrary, the facts seem to bear direct evidence against the truth of these speculative notions. For if the views of Flourens and others, who regard the cerebellum as the regulator of locomotion in men and animals, be true, the individual who was the subject of the phenomena I have recorded, should have been a feeble, tottering being, incapable of maintaining a uniform equilibrium of the body, and of exercising the common functions of station and progression.

But notwithstanding the unnatural proportions and diminutive size of the cerebellum, this individual was a strong and vigorous person, and executed with readiness and without embarrassment, all the locomotive movements natural to his species, like any other robust and healthy man.

He never exhibited during any period of his life, so far as I can learn, any feebleness or want of harmony in his movements, which could be charged to an imperfection of his physical organization. So far, therefore, as the circumstances of his case have any physiological connection with the cerebellum, they evidently do not favour the theory, that this organ was destined to control and regulate the functions of locomotion.

Nor do the phenomena favour the notion that this portion of the encephalon is the source and centre of sensation, as has been supposed and advocated by M. Foville, from the fact that it springs from a part of the sensory tract of the spinal marrow. For if this were the true function of the organ, its possessor would have exhibited during life an unnatural obtuseness, or deficiency of sensibility, and a diminution or absence of physical and mental power which this property of the blood promotes and influences. But no such imperfection was ever noticed in this person. If, therefore, the circumstances of the case afford any evidence tending to illus-

trate the functions of the cerebellum, it is that the office of the organ is the one which was long since attributed to it by the founder of phrenology.

CASE II. *A violent blow over the occiput, and upper part of the neck, followed by immobility of head, numbness of right arm, abolition of amative-ness, aberration of visual perception.*—T. P. B., ætat. 41 years, suffered a serious injury on the 29th day of June, 1836, which resulted in a series of interesting symptoms. Mr. B. was a passenger in one of the trains of railroad cars which unfortunately came in collision on the tract between Boston and Providence. While seated on a front seat of a car, with his back directed towards the engine, Mr. B. noticed that a sudden effort was made by means of the “breaker,” to arrest the progress of the cars. On observing this, he arose from his seat, and thrust his head out of the window to ascertain the meaning of this operation. At this moment, and while the back part of his head and neck were opposite the edge of the window-frame, the two trains came in collision with tremendous and fearful violence. The consequences of this accident were, that the cars were broken into many fragments, and that most of the passengers who occupied them were thrown out and seriously injured. Mr. B.’s head and neck were brought up against the edge of the window-frame with great force, and he himself was projected to a distance upon the ground, where he remained for some time in a state of insensibility. When he was first lifted up, it was thought by his fellow-passengers that he was fatally wounded—that his skull was fractured, or the bones of his neck dislocated. He, however, regained his intelligence, and was soon conveyed to his dwelling in a carriage. On visiting him one hour after the accident, I found him in his bed, suffering great pain in the occipital portion of his head, and upper part of the neck. He was lying on his back, unable to rotate his head on the pillow, or to move from a horizontal position. Every attempt to move himself was attended by excruciating pain, and he would not allow others to move him from fear of suffering.

On examination, some blood was found on his face, and a flesh wound of minor importance was discovered in the integuments covering the left mastoid process, and the inferior portion of the occipital bone. These parts were somewhat swollen and tender, as were the integuments and muscles of the neck. No indications of fracture of the cranium existed, nor could any dislocation or fracture of the cervical vertebræ be detected. The pain in the head, the disturbed state of mind, the inability to move, and the state of the pulse and other symptoms, which the patient laboured under, induced me to believe that he had suffered a serious concussion of the brain, and an injury of the muscles of the neck, and of the first and second cervical vertebræ.

The immediate treatment was based on these suppositions. For two or three days and nights he obtained little or no sleep, and could not be moved from his horizontal position. The antiphlogistic treatment was continued for

some days, when he was so much relieved, that he could by much care, and cautious effort raise himself from his bed. To do this, he was first obliged to turn cautiously from his back upon his left side, and then raise himself to the sitting posture by the aid of his left elbow. This was the only method he could adopt to raise himself from his bed without rotating or moving his head, which movement was constantly accompanied by extreme suffering. On the second day after the accident, he complained of a numbness in his right arm, and experienced a difficulty in passing his urine. The contractile power of the bladder seemed to have been diminished, and he was compelled to resort to artificial means to evacuate the organ. In the course of two weeks, he was able to leave his bed and to walk into the street. And now another interesting symptom was manifested. As he walked about the house and in the street, he observed a singular appearance in the objects about him. Near objects seemed to him to be at a distance, and he felt as if he was much elevated above them.

While promenading the side-walk, the street seemed to be interminable in length; and when standing by and conversing with a person of his own height, he experienced the feeling that he was vastly the tallest, and that he was actually looking down upon him during the conversation, yet all objects appeared natural in colour, size and proportion.

Between the fourth and fifth week after his injury, he made the discovery that he had lost the desire and physical power for sexual intercourse, and that no amorous sentiment, or the approach of a female, could excite it; and he was of the opinion that the amative instinct and sexual desire had ceased to exist from the time he was wounded.

These symptoms, which were the prominent and peculiar ones of the case, were exceedingly troublesome and were for a long time combatted by local bleeding, blistering and other remedies. The bladder gradually recovered its power, and the aberration of visual perception was by degrees corrected, so that in the course of four months, Mr. B. was enabled to urinate freely and naturally, and to view objects in relation to himself as he was accustomed to see them previous to his injury.

He was still, however, unable to rotate his head, and when he attempted to do so, he heard a sort of grating noise, which evidently arose from the deranged action of the vertebræ of the neck, or of the ligaments or muscles attached to them. The numbness of the right arm still continued, and the limb had decreased in size, its circumference being considerably less than that of the left arm.

The instinct of generation, for which he was peculiarly distinguished while in health, was still dead, and the idea of its total annihilation, gave him much uneasiness. The trouble in moving the head, and the numbness of the arm continued for some months, and the generative function remained completely silenced, according to B.'s own report, until the last summer, and is even now, (Dec. 18, 1838,) but partially restored. The mental powers

of this patient, particularly his memory of events, were for a time seriously affected, and his decision, courage and resolution enfeebled. In these respects, however, as in most others, the individual now enjoys his accustomed health and strength.

The history of this, like that of the preceding case, is interesting both to the physiologist and pathologist. Viewing the phenomena as the results of the accident which befel the patient, this will readily account for their development, and at the same time recognize a physiological connection between the brain and some of them, the existence of which cannot be explained except on the supposition that certain portions of the encephalon are endowed with certain specific functions. The prominent symptoms were, 1st, the sudden loss of sensation; 2d, the fixed position of the head; 3d, numbness of the arm; 4th, loss, for a time, of the contractile power of the bladder; 5th, abolition of the amorous propensities; 6th, aberration of visual perception of objects. All these phenomena must have resulted from the injury which Mr. B. received, and are susceptible of a rational and satisfactory explanation. The force of the blow, as has been stated, fell upon the occipital portion of the cranium and upper part of the neck. The direct results, therefore, of the blow of the window-frame, must have been, 1st. an injury of the muscles which support and rotate the head, and also of the first and second vertebræ of the neck and their ligaments; 2dly, a concussion of the whole brain, and more particularly of the cerebellum; and 3dly, and lastly, a sudden compression of the spinal cord of the neck. Admitting these to have been the direct consequences of the blow, the symptoms above described would naturally follow. For, in the first place, a concussion of the brain would occasion the first symptom, viz, the loss of all sensation.

Secondly, a wound of the trapezius, the splenius, the complexi, the oblique, and reeti muscles, and of the ligaments of the first and second cervical vertebræ, would necessarily give rise to the fixed and immoveable position of the head, which was one of the most troublesome and obstinate symptoms that marked the case.

Thirdly, a violent blow on the spine of the neck would necessarily produce a lesion in the posterior, lateral columns of the spinal marrow, at the points where the nerves of sensation have their origin, and would occasion the numbness which Mr. B. experienced in his arm.

Fourthly, the loss of the contractile power of the bladder, and also of the erectile energy of the penis, which last ought to have been named as one of the phenomena of the case, are referable, and would naturally result from a partial injury which the whole spinal marrow must have suffered opposite the point where the wound was inflicted on the spine of the neck. It should be observed, however, in relation to the erectile power of the penis, that this power depends very much on the existence and energy of the venereal desire or passion, and that if this be destroyed, as in B.'s case, the consequence

would be a partial or total deficiency of muscular energy and functions of the external organs of generation.

Fifthly, the sudden and entire destruction for a long time of the instinct of amateness, which was one of the most interesting circumstances of the case, can be accounted for only on the principle that the cerebellum is the seat and source of this instinct. The principal force of the blow was received upon the occipital bone, and must have produced a lesion of some kind in the cerebellum.

If such were the fact, the inference is a very natural one, that the lesion of the cerebellum was the proximate cause of this singular symptom. I know of no other rational explanation of the fact; certainly no other explanation is suggested by anatomical or physiological researches.

The sixth and last remark which I shall make respecting the rationale of the symptoms relates to that singular error of perception which the patient was conscious of while viewing external objects.

Why near objects should appear at a distance, and the streets of interminable length; and why he himself should possess the feeling that he was much taller than objects and persons of his own height, and that he was looking down upon them? are questions not easily answered. The organs of vision were uninjured, and the patient could judge accurately of the form, colour and other external properties of objects of sight. This singular affection then did not depend on any lesion of the organ of vision, the eye; and the lesion, therefore, it appears to me, must have been that of perception, and must be accounted for on the principle that a particular portion of the brain is appropriated for the exclusive function of visual perception. If this principle be founded in truth, then the singular error of perception under consideration might result from the blow which Mr. B. received. For it has been demonstrated that the optic nerves have their origin in the corpora quadrigemina, which bodies, it is well known, are in immediate connection with the cerebellum. These bodies or ganglions, therefore, as well as the cerebellum, must have experienced the effects of the blow inflicted upon the occiput, and might have suffered an organic change sufficient to derange their functions and give rise to this interesting phenomenon.

CASE III. Hemiplegia. Morbid Salacity. Disease of the Cerebellum.—The following case occurred in the practice of my friend Dr. WHITMORE, of Brighton, and was communicated by him to the Boston Society for Medical Improvement; and with his permission, I make it a part of this communication. I will here state what is not especially noticed in the description of the case, that the subject of it had, for some years previous to the attack of hemiplegia, lost much of his amorous desires, and the physical ability of gratifying them.

The case was reported in September, 1835, in the following words:

“ Mr. —, ætat. 73, has been married about 40 years, has had eleven

children, ten of whom, as also his wife, are still living. Mr. — worked alternately as shoemaker and farmer; frame large, and general appearance that of robust health. Soon after marriage, he began to complain of dizziness and noises in head, to which he was more or less subject until his death. About four years ago, he experienced on rising from bed, for three or four mornings in succession, excruciating pain in the head, which was followed by a sensation as if something had given way in left side of head with an audible crack, such as to lead him to inquire if the bystanders did not hear the sound, and was surprised to find they did not. After this, he became partially deaf in left ear, and the dizziness increased. During these dizzy turns, he was obliged to catch hold of the nearest object to keep from falling, and at such times every thing seemed to be whirling about like wheels, with a motion always from right to left; these symptoms were for the most part attended with great heat and pain about head, and with redness of scalp. During the severity of suffering, he was at times delirious. Most relief was gained by cupping nape of neck and very little from other means.

“Two years ago, had hemiplegia of right side, and has had two other attacks since, all slight. Since the occurrence of these he has had a *morbid salacity*, which continued with little intermission, and increased by degrees till three months ago, and then gradually subsided, so that the desire became imperious only once or twice during the night without ability to gratify it, owing to imperfect erection, and for the last year, there has been *no* seminal emission. This lustful feeling aggravated all his other sufferings, and destroyed most of his comfort. Such is the account of the patient as given by a particular friend; but the patient during his sickness, expressed himself strongly on the subject of this revived sexual propensity, and declared that the desire was felt many times during the day and night, and was scarcely diminished by the frequent attempts he made to gratify it.

“For the last year, he has been decidedly growing worse, both in body and mind—*mind in a state of imbecility*. Early in summer, he had an *epileptic* paroxysm, and within a few weeks before his death, had a second. For the last five months was occasionally delirious—screaming as if frightened, and sometimes as if in pain—was afterwards unconscious of what had happened.

“He died on the 18th September, 1835, having been in a state of stupor for some days.

“On the following day, the head was examined. The membranes of the brain presented some morbid appearances, such as very strong adhesion of the *dura mater* to the skull; thickening with white spots in the arachnoid and a large quantity of serous fluid in the pia-mater; arteries undergoing ossification.

“The brain was healthy, except for the disease to be described. The

cerebellum being removed for examination, the right lobe was found to be of its full size; the left about one-fifth smaller, and the greater part of its under surface in a *remarkably* collapsed state—*hollowed* in as an organ usually appears *externally*, when there has been any very great loss of substance within. In one place to the extent of about three lines square, the disease beneath had penetrated quite to the surface, and over this the *pia mater* contained a considerable quantity of dull yellowish serum, elevating the *arachnoid*; otherwise the surface of this lobe of the cerebellum looked well, retaining its integrity, natural colour and consistence.

“An incision having then been made through the collapsed portion to the centre of the lobe, and another to cross it, it was fully demonstrated that the whole substance of the organ below the *crus cerebelli* was destroyed, and all traces of it gone, except a line or two in thickness, of the very surface which served as *parietes* to what may be called the cavity. The sides of the cavity were in contact, and were connected here and there by a very soft delicate tissue of a light rusty brown colour, and were separated by the slightest force. The same sort of substance lined the cavity, appearing in some parts a mere discoloration of the inner surface; in others, like a distinct tissue, passing by invisible degrees into the *pia mater*, where it dips down between the lobes of the cerebellum. The cavity very probably contained some serum, but if so, it had escaped before it was laid open. The *crus cerebelli* had a dull, somewhat opaque yellowish colour, and was considerably firmer than natural, especially towards its under surface, where it bounded the cavity. This surface was also somewhat irregular, as if a small portion of it had been destroyed by disease. On cutting through its substance, there was found a coagulum of dark-coloured blood of the size of a duck-shot; the remainder of the cerebellum was healthy.”

In this case, we have a remarkable pathological proof of a relation existing between the cerebellum and the instinct of reproduction; and the revival of the instinct and powers of propagation, (which had for years been extinguished,) taking place on the accession of a disease of the cerebellum, and continuing active until the organ began to lose its firmness of texture, and to undergo disorganization, is strong confirmation of the evidence furnished by the two preceding cases, that this part of the brain is the source and centre of the instinct.

Boston, December, 1837.

ART. VIII. *Account of Scarlatina, as it occurred in Charlestown, N. H., in 1837-8.* By SAMUEL WEBBER, M. D.

FROM October, 1837, to July, 1838, *Scarlatina* prevailed in this place, though not extending over the whole town, but being limited to the southern half. The general character of the disease was rather mild, though there were some severe cases, and a few instances of protracted and complicated secondary affections, as well as some occasional circumstances worth noticing.

In the well marked cases, the eruption was copious, fading almost uniformly on the fifth day, and always as soon as the sixth. In several instances, a miliary eruption of considerable extent supervened on the fourth day, blending with the proper eruption of the *scarlatina*, and dying away with it. These were the cases in which the vigour of the eruption was kept up till the sixth day. In many of the lighter cases the eruption began to fade on the third and fourth days, in a few instances on the second; and in several, a thin sprinkling of minute red points was observed on the body for only a single day.

The affection of the throat had an equal variety of severity and duration, and generally corresponded in these respects with the affection of the skin, except in a few cases being of little longer duration. At the commencement of the attack, the soft palate, tonsils and fauces, as far as visible, were of a bright red, studded with minute vesicles or papulæ, which I supposed to be the first appearance on these parts of the eruption characteristic of the disease showing itself earlier there than on the external skin, as in some other exanthems. This eruptive appearance I have always noticed in all the varieties of *scarlatina*, though the prevailing tint differs in different epidemics and in different cases of the same, the more malignant having a deeper and more dusky shade of red, verging into or mottled with purple; the malignancy being somewhat in proportion to the darkness of the colour. In the milder cases, these papulæ or vesicles subside and disappear with the redness; in the more severe, they pass into sloughs or crusts, more or less superficial, lighter or darker in colour, and more or less confluent, according to the combined severity and malignancy of the case. In favourable cases, these, after a short time, are loosened and thrown off, leaving beneath a healthy and healing surface, and affording in the whole process a strong likeness to the desquamation of the skin, which follows the external eruption, being in effect but an exemplification of the same process upon a constantly moist and secreting surface. In the more malignant and intractable cases, the vesicles degenerate into gangrenous and sloughing ulcers.

There is often, also, an exudation of patches of coagulable lymph upon the surface of the mouth and fauces, particularly upon the tonsils and uvula.

This generally accompanies the more entonic variety of the complaint, and is not peculiar to the eruptive sore throat of scarlatina, but may often be seen in *cynanche tonsillaris*.

The regular appearance of this eruption in the throat, seems to have been singularly overlooked even by the most esteemed writers on this disease. They speak of the efflorescence first showing itself on the face and neck, and then on the trunk, and spreading to the inside of the mouth and fauces; and some even mention this as only an occasional circumstance, whereas in an experience of some years, of several epidemics, and a large number of cases, I have found its appearance so uniform and invariable, preceding the eruption on the external surface, that it has often served me as a diagnostic in the early stages of the complaint.

In the epidemic under consideration, the affection of the glands of the throat in the well marked cases was severe, though extreme in none, being, in all instances of sudden and severe swelling, successfully combatted by sinapisms or blisters.

In a few instances, there was a considerable discharge of bloody mucus from the throat and nostrils, with swelling of the upper lip and of the nose; thick crusts also formed on the edges of the nostrils and on the lips.

In three or four cases there was, after the turning of the eruption, a singular attack of delirium, resembling exactly delirium tremens, lasting from 24 to 36 hours, when it was subdued by the combined agency of a heavy dose of morphine and a powerful blister to the back of the neck. Either of these singly seemed to be productive of little benefit. I began in part of the cases with one, and in part with the other of these two remedies, but relief was not obtained in any instance till the action of the two was combined.

One of my patients, a little girl ten years of age, was suffering from the effects of an injury of the foot, in consequence of which two abscesses had formed, one below the lower point of the fibula, and the other over the lower extremity of the cuboid bone. These had been opened and evacuated, and their cavities were obliterated, though small superficial ulcers remained at the points of opening, filled with granulations. Soon after the breaking out of the eruption, and while these ulcers were covered with adhesive plasters, sloughing of them took place, and before the process could be arrested by a change of dressings to fomenting poultices, frequently renewed, nearly the whole of the integuments of the original abscesses were destroyed down to the ligaments and periosteum, and these were so much injured, that though the cavities were in a week or two filled with healthy looking granulations, the process of cicatrization was extremely slow, and exfoliation of the bones took place, retarding the perfect healing for several months. Among the fragments of bone discharged, I recognized a considerable portion of the articulating surface of the lower end of the cuboides.

In another instance, a stout healthy lad of sixteen, the day before the attack, fell from a cart loaded with hay, and as he slid over the side of the load, was partially arrested in his fall by one of the pointed stakes of the cart, that projected through the hay. This caught him by the scrotum. The consequence was an irregular laceration of the scrotum extending through its substance and more than an inch and a half in length, as I first saw it, when the part was much corrugated. The wound was carefully closed by three or four stitches, with strips of adhesive plaster between. From the effect of the attack, however, adhesion failed to take place; the edges swelled and became sloughy, with a thin acrid discharge, and when I went to dress the hurt on the day of the attack, I found one or two of the stitches had already cut their way out, and I was obliged to disengage the others. After the eruption had declined, the swelling gradually subsided, the edges became covered with healthy granulations, contracted, and in the course of a fortnight were united firmly and smoothly.

Some years ago, during the prevalence of scarlatina, a similar morbid action took place in the edges of the wound made by the lancet in bleeding a patient. After a partial adhesion, the edges became disunited, and by what seemed rather a phagedenic operation than the formation of any considerable slough, the puncture was converted into an oval hole extending into the vein, in which all circulation had ceased. After the decline of the eruption, and considerable improvement in the state of the throat, and of the general symptoms, this patient was attacked with inflammation of the lungs with an effusion of water, by which he was carried off with great suddenness, so that no opportunity was afforded of knowing what would have been the termination of the local injury of the vein.

In a number of the cases, after the turning of the eruption, and while the disquamation was going on, there were severe pains and lameness of the joints, chiefly of the upper extremities, and particularly of the wrists, but in several, the legs also were affected. Little or no swelling accompanied these, and their duration was but of three or four days. Friction with warm camphorated spirits, or with some opiated liniment, gave considerable relief.

In two or three cases at the expiration of the second or third week, neuralgia occurred, in one case behind the ear, in another in front of it, in a third in the supra orbital nerve, and in the sternum. This affection was severe but not permanent, appearing to be connected with derangement of the digestive organs, and more or less intermittent. In the severest case, that of the pain in the sternum, in which also the pain was most persistent, prompt and perfect relief was obtained by the application of cerate sprinkled with morphine to the cutis, previously denuded of the cuticle by means of a blister. In the others, after clearing the alimentary canal by means of an emetic and cathartic, gentle doses of the sulphate of quinine soon effected a cure.

There were a few instances of rapid and severe bloating coming on after apparent recovery. This seemed generally to be accompanied or produced by derangement of the alimentary canal and its subservient organs, particularly the liver. An emetic followed by a brisk mercurial cathartic generally produced great evacuations of bilious matter followed by a speedy subsidence of the bloating. In one or two cases the derangement of the digestive organs was more lasting, accompanied with feverishness, probably gastro-enteritis, and required some days perseverance in the use of remedies before it could be subdued. In these cases, moderate doses of calomel and Dover's powder, with some mild laxative interposed occasionally, seemed of much service. In one case only did this bloating pass into a genuine dropsical affection. In this instance, after some amendment, the child being imprudently fed with too much and too hearty food had violent convulsions of two or three hours duration, lasting until repeated doses of a powerful emetic character had succeeded in exciting the action of the stomach, and the disgorgement of its contents. Severe bloating with great prostration of strength followed, succeeded by an erysipelatous eruption over the bowels, and, finally, deposition of water in the cellular membrane with scanty and bloody urine. Digitalis, ultimately combined with and followed by quinine, then by cinchona in infusion with carb. potass. and infusion of chimaphila umbellata gradually effected a cure, though the case was tedious and troublesome; the child previously to the attack of scarlatina having been much troubled with an asthmatic affection which was greatly aggravated by the subsequent diseased actions, and probably in its turn reacted unfavourably upon them.

Two cases terminated fatally from effusion of water into the lungs. One of these ended thus, on, I believe, the sixth or seventh day. I did not see the patient till about four hours before death. She was a stout young woman who was averse to employing a physician, thinking it better to trust to nature and domestic remedies in a disease that had a certain course to run. The weather at the time (July) was extremely warm, though there was a strong southwesterly wind. Suffering much from the combined heat of the disease and the season, she endeavoured to alleviate it by exposing herself freely to a strong current of air through an open window, and even by sitting in an outer door way. The day previous to her death she complained of oppression at the chest, and of difficulty of breathing, and next day seemed to her parents so much worse, that, in spite of her opposition, they sent for me—too late, however, to be of any use.

The other was a boy *ætat.* 10. He had passed through the eruption about a fortnight previously, and in spite of all my remonstrances was suffered, by his ignorant and imbecile parents, to run out doors at pleasure. In this way he was greatly exposed one day in a cold January rain, the next day he became sick with symptoms of a bad cold; on the subsequent day he was much worse, and towards night I was sent for. I found him labouring

under the symptoms of a violent attack of the lungs, with threatening effusion. He seemed, however, very averse to taking medicine, and his parents were unwilling to force his inclination. When I visited him next day nothing had been done since my departure the day before. The medicines lay upon the table where I had left them, and a blister I had applied to the chest, had been removed nearly as soon as I was out of sight. The case was evidently now hopeless, and the boy expired in a few hours.

The only other case that proved fatal was that of a child of about two years old, of Irish parents, poor and ignorant, and exceedingly apt to fancy that whatever a child wanted to eat must be good for it. The original disease was light, and the patient seemed to be passing through it favourably, when, in consequence, as I supposed, of some improper feeding, it was attacked with symptoms of great distress in the bowels, obstinate costiveness, vomiting and fever, followed after a while by contractions and spasms of the flexor muscles, especially of the upper extremities, the thumbs being drawn into the palm, the first joint of the phalanges contracted upon the thumb, the wrist upon the forearm, this upon the arm, the last partly raised from the body. This contraction was progressive, beginning with the most distant joints and proceeding upwards. Although the vomiting was subdued, and some scanty motions obtained from the bowels, the most active remedies failed to make them soluble, and after a few days of extreme apparent suffering the child died in this contracted state, with the arms agitated by slight but almost constant spasms, and with symptoms of oppressed brain.

In almost all the cases of secondary affection that were more than very transient, the urine was much altered, being more or less bloody, or sometimes of a dirty brownish hue.

It seemed as if what is called the morbid diathesis of scarlatina remained in the system about three weeks from the time of the eruption, during which period the patients were liable to secondary affections, however well they might appear, from exposure to cold or errors of diet. This may possibly be accounted for in part from the unusual sensitiveness of the skin, weakened as well as excited by the eruption, and more or less deprived of its cuticle from the desquamation, and from the same state of the mucous membrane lining the internal passages, which membrane, I am fully persuaded from long and attentive observation, partakes fully with the skin in the effects of the disease. The natural tone of these organs requires time for its restoration, which is not completed under the term mentioned. If this passes without farther disturbance, none seems especially to be apprehended.

Charlestown, N. H., December, 1838.

ART. IX. Case of Severe Compound Fracture of the Leg, successfully treated. By ED. M. MILLARD, M. D., of Grand Côteau, La.

DECEMBER 17th, 1836. I was called in haste with my associate, Dr. Robert E. Smith, to visit an Irishman, D——., ætat. about 25, who was severely injured by the fall of a tree whilst felling timber in the woods. Found patient, one hour after accident, removed to the house a few hundred yards distant from the spot where it occurred, in much pain, with his right leg bearing marks of severe contusions both anteriorly and posteriorly, and evidently *smashed*, as he termed it, for a considerable extent. About four inches above the malleolus an external wound was exhibited two inches in length, through which protruded the lower fragment of the tibia, covered with grass and mud, and casting off, upon being cleaned, two spiculæ of bone of considerable dimensions. About five inches below the knee another fracture was evident, upon the least motion, and the intervening space between the two bore manifest marks of being broken into several fragments. It appeared as though the tree had fallen immediately upon the middle portion of the leg, which we were informed was the fact. The extent of the fracture, and the severity of the contusions and lacerations over so large a portion of the member, at once indicated an immediate amputation, which being suggested to the patient, he peremptorily refused to submit to it, declaring that he preferred death to the operation. This left us no other alternative but an attempt to save the limb by the usual course of practice. We, therefore, extended the leg, applied such splints and bandages as were necessary to retain the broken bones in juxtaposition and in a state of quietude, and dressed the external wounds. An antiphlogistic treatment was rigidly enforced, (the patient was an athletic man) not a bad symptom supervened, and he was so far recovered in the eighth week as to be able to remove from place to place by the assistance of crutches. He left the neighbourhood a week or two afterwards, being able to walk with a cane alone.

N. B. I have since understood that a new orifice opened in his leg, from which have issued several small spiculæ of bone, and that he has entirely recovered under the direction of Dr. Hill, of Opelousas.

Grand Côteau, La., Dec. 1838.

MONOGRAPH.

ARTICLE X. *On Sanguineous Tumours of the Head, which form spontaneously. (Cephalæmatoma.)* By E. GEDDINGS, M. D., Professor of Pathology and Medical Jurisprudence in the University of the State of South Carolina.

CEPHALÆMATOMA,* (from κεφαλή, *head*, and αιματωμα, a *bloody tumour*, is a soft fluctuating tumour, containing blood, generally occupying some portion of the scalp, mostly over the parietal bone, often accompanied with hard, prominent, uneven, circumscribed borders, imparting to the touch the semblance of a depression of the corresponding portion of the cranium. Such tumours are seldom observed, except in newborn infants; yet they are now and then met with in children of a more advanced age, and in some rare instances even in adults. The disease is not one of very frequent occurrence; yet when it is considered, that there are few engaged extensively in obstetrical practice, who have not met with it, it is a little remarkable, that it should have received so small a share of the attention of practitioners, and that so few writers on the diseases of infants have noticed it. With only a few exceptions, it has been entirely overlooked, or very imperfectly described, by English, French, and American authors; and although the German physicians have investigated it with more attention, its characters still remain involved in much obscurity. Indeed, so far as our own country is concerned, the works which are in the hands of the profession generally, scarcely contain any notice of it, and as, we doubt not, there are many practitioners who have experienced more or less embarrassment on encountering a disease for the first time, which they had not seen described, we have thought we might be rendering an acceptable service to many, by offering such information on the subject, as we have been able to collect, either from our own observations, or from the labours of those who have made it an object of special inquiry.

1. *History of the disease.*—It is highly probable, that these sanguineous tumours, or abscesses, of the head, were observed by practitioners of an early period, but as they have been generally confounded, until within a few years, either with hernia of the brain, or those fluctuating protuberances of the scalp which are occasioned by external violence, the first clear descriptions of them to be found are of comparatively recent date. It will indeed be observed, by referring to most of the treatises on obstetrics and the diseases of infants of the present day, that when these tumours have been noticed, they have been imputed either to the pressure of the head of the child against some part of the bony walls of the pelvis, or to some injury sustained during delivery. Under these circumstances, it is exceedingly difficult to offer a satisfactory history of the

* Synonymes.—*Cephalæmatoma*, NÆGELE; *Eccymoma capitis*, FEILER and CARUS; *Eccymoma capitis recens natorum cariosum*, PLENK; *Trombus neonatorum*, GÆLIS; *Abscessus capitis sanguineus recens natorum*, PALETTA.

disease, since from the careless manner in which most of the cases have been described, it would be impossible, after so great a lapse of time, to distinguish between such as were proper examples of the spontaneous sanguineous tumours under consideration, and those which owed their origin to violence, or some other cause. That different conditions were confounded under the appellations of encephalocoele, ecchymosis of the scalp, &c. will be rendered apparent in the course of these observations; and it will likewise be shown, that cases which were unquestionable examples of sanguineous abscess of the head, were described as instances of hernia of the brain. It does not comport with the objects and scope of this paper, to enter upon a minute and elaborate history of the subject, and as we have neither time nor convenience to refer specially to all the accessible sources of information, we shall content ourselves with the references to the early authors made by Professor Naegele, who has investigated the question with much labour and attention, merely premising, that some of them not being at our command, we are unable to decide positively, whether the whole of the notices bear upon the disease in question, or if some of them may not refer to some analogous affection. The following authors are enumerated by Naegele, as having noticed sanguineous abscesses of the scalp:—Aétius, Valentin, Mauriceau, Preus, Zwinger, Ledran, Trew, Corvinus, Störck, Bœrner, Smellie, Henkel, Gouch, Ferrane, Chopart, Desault, Camper, Baudelocque, Stein, Voigtel, and Prenke. Most of them, however, have merely considered the subject incidentally, as connected with the practice of surgery and obstetrics, or only reported isolated cases, without attempting to give a pathological exposition of the characters of the affection. It should be remarked, moreover, that by many of the individuals whose names have been mentioned, the disease was described under the name of hernia cerebri—an error which has been committed likewise, by many of their successors; and it is highly probable, that even at the present time, the two affections are sometimes confounded.

Sanguineous abscesses have been either described *ex professo*, or noticed particularly, by Levret,* Siebold,† Michaelis,‡ Naegele,§ Klein,|| Paletta,¶ Zeller,** Hoere,†† Busch,‡‡ Carus,§§ Osiander,||| Gœlis,¶¶

* Journal de Med. xxxvi. 410. 1772.

† Chirurgische Tagebuch. Nuremberg. 1792, Obs. xvi. xlv.

‡ Ueber eine eigene art von Blutgeschwülsten, in Loder's Jour. B. ii. S. 4. 657. 1799.

§ Erfahrungen und Abhandlungen aus dem gebiete der Krankheiten des weiblichen Geschlechtes. Mannheim, 1811. Also in Journal Complémentaire, tome xiii, p. 227. Paris, 1822.

|| Bemerkungen über bisher angenommene Folgen des sturzes der Kinder auf den Boden bei Schnellen Geburten, Stuttgart, 1817.

¶ Exercitationes Pathologicae, Pars i. c. x. p. 123. Cap. xii. p. 188. Mediolani, 1822.

** De Cephalæmatomate, seu sanguineo cranii tumore recens natorum; commentatio inauguralis, &c. Heidelberg. 1822. Also an analysis of the same, in Journal Complémentaire, xiii. p. 171. 1822.

†† De tumore cranii sanguineo recens natorum et externo et interno, &c. Berol. 1825. Also Ueber die äussere und innere Blutgeschwulst neugeborner Kinder, in Von Siebold's Journal für Geburtshülfe, bd. iv. Frankfurt, 1825.

‡‡ Ein Beitrag zur aufklärung des wesens der schädelblutgeschwulst neugeborner Kinder. Heidelberger Klinische Annalen, bd. ii. p. 245, 256. 1822.

§§ Lehrbuch der Gynækologie, bd. ii. p. 585. Leipzig, 1823.

||| Handbuch der Entbindungskunst, bd. ii. abth. ii. p. 207. Tübingen, 1821.

¶¶ Praktisches Abhandlungen ueber die Krankhieten des kindlichen Alters, bd. ii.

Chelius,* Dieffenbach,† Pigné,‡ Velspeau,§ Mombert,|| Valleix,¶ and several others, who have reported isolated cases. We have the memoirs and observations of most of these individuals now before us, besides a number of particular cases, and from these sources, aided by our own observation, we shall endeavour to condense such a description of the disease, as will serve to put our readers in possession of its most important characters.

2. *Description of the disease.*—It is proper to premise, that we do not propose to consider those sanguineous tumours which depend upon blows or contusions of the head, nor shall we notice some other superficial ones of the scalp, which consist of dilated capillary vessels, and which have received the appellation of aneurism by anastomosis, although we shall advert to a similar kind of tumour of the bone. Our observations will be confined to such affections of this kind as take place spontaneously, and which occur chiefly upon the heads of new-born infants, though not peculiar to them alone.

These tumours are generally discovered at birth, or shortly after, but sometimes not before the expiration of several days. They likewise occur sometimes at a much later period, and have been occasionally met with at the end of several months, or even years. Such instances are, however, exceedingly rare, yet we have seen one in a child nearly two years old, and another in one between the age of five and six. There is generally but a single tumour, but sometimes two or more exist, either in a state of communication with each other, or perfectly isolated.** They are mostly small, slightly prominent, smooth and soft upon the surface, and circumscribed by hard defined borders, which in a majority of cases, when examined with attention, are found hard and elevated, conveying the sensation of a hard bony ledge, surrounding the outline of the tumour, and an intermediate excavation, as though the outer table of the skull had been removed. Sometimes they are more diffused and flattened, and less clearly circumscribed; but even when extensive, the hard prominent border can be perceived, although it is less regular, and frequently presents prolongations and sinuosities running in different directions, occasioned by the unequal power of resistance presented by the integuments at different points, in consequence of which, they yield more readily to the distending force of the blood in some places than in others. In a few instances, however, it is said by Zeller and Naegele, that the hard elevated boundary is either entirely absent, or confined to a portion of the circumference of the tumour. In all cases, when they are properly developed, a distinct fluctuation can be perceived, and by making pressure upon the part, the point of the finger can be brought to bear upon the solid bottom of the cavity. The skin is seldom discoloured, but presents a pale, shining appearance, and in a majority of instances, the part is so little sensible, that considerable pressure may be made over it without occasioning much pain. In some few cases, when the fluctuation above alluded to is not so distinct,

* Handbuch der chirurgie, bd. ii. p. 190. Heidelberg und Leipzig, 1829. Also Heidelberg Klinisch. Anallen, bd. iv.

† Rust's Theoretische praktisches Handbuch der chirurgie. bd. i. p. 120. Berlin, 1830.

‡ Journal Universel et Hebdomadaire. September, 1833.

§ Ibid. October, 1833. Also, These sur les contusions dans tous les organs. Paris, 1833.

|| Siebold's Journal für Geburtshülfe.

¶ Gazette Médicale de Paris, 13th Sept. 1834. p. 577.

** Naegele, op. cit. Also, Zeller.

the tumour is soft and spongy to the feel, and difficulty may be experienced in deciding upon its nature.

The size of the tumour is exceedingly variable, and although it sometimes remains stationary from the time it is first observed, it occasionally increases progressively, until it attains a considerable volume. It may not be larger than an ordinary hazlenut; yet in some instances it attains the volume of an orange; and cases have been reported, in which it diffused itself over the whole extent of one of the parietal bones, or even the entire surface of the top of the head. In one of the cases which fell under our observation, the disease was seated over the course of the sagittal suture, and extended itself laterally, to each parietal protuberance; anteriorly, in front of the anterior fontanelle; and posteriorly, beyond the limit of the junction between the sagittal and lambdoidal sutures. Its dimensions, however, as previously suggested, may vary according to the duration of the disease; for although the tumour may exist anterior to the period of birth, as represented by Siebold, Osiander, Michaelis, Pigné and others, and present a well defined indurated border, it sometimes continues to increase for some time afterwards, until it attains a size much beyond that presented by it at the time of its first formation. This, however, can only happen when its barrier is formed by the soft parts, because when, as is sometimes the case, its boundaries are formed by bony deposits, the same facility of extension does not exist. Another circumstance deserving consideration in connection with these tumours is, that in a few instances, a manifest pulsation can be perceived when the finger is applied to the part, showing that the cavity of the tumour communicates with one or more arteries. This phenomenon is, nevertheless, comparatively rare, and has only been noticed by a few individuals. The same thing is sometimes met with in those sanguineous tumours which form in consequence of contusions inflicted upon the head.

It is a little curious, that these tumours are in almost every instance seated over the parietal bones, and in a majority of cases, on the right side. This has been remarked by nearly all the authors who have treated of the subject. Only a few cases have been reported, in which the disease occupied the frontal or occipital regions, and Dieffenbach remarks, that he had never observed one in the temporal region, although Chelius speaks of such an event, and Velpeau observed a case, in which the tumour was spread over the left parietal and temporal, occipital, and the right parietal regions. Pigné has erroneously represented, that they are never found in the course of the sutures. This is contradicted by one of our own cases, in which the tumour formed over the sagittal suture; by one of Naegele's, in which it extended from one parietal region to the other; as well as by Velpeau's case just referred to. A very interesting case is also reported by Michel,* in which a large tumour of this kind, which presented a pulsation isochronous with that of the brain, was seated over the posterior fontanelle, and the right limb of the lambdoidal suture. Indeed, it may be affirmed, that the disease may form upon any portion of the head that is not covered by thick muscles, and even these latter situations cannot be considered as entirely exempt, since we occasionally meet with sanguineous abscesses, which are probably of the same nature, in other parts of the body remote from the head. Paletta† has reported many such examples, and others might be referred to.

* Gazette Médicale, 5 Mars, 1833. p. 183. † Op. cit.

These tumours, when opened, are always found to contain blood. This fluid, however, presents various modifications, according to the extent and duration of the disease, the condition of the soft parts and of the bone, and the intimacy of the connection between the cavity of the tumour, and the small adjacent blood-vessels. It is sometimes perfectly fluid and of a florid colour, as though it had issued fresh from a divided vessel—frequently dark coloured, sometimes sanious, but in a large proportion of cases commingled with more or less serum, by which it is rendered much thinner than natural. Sometimes, indeed, it is so watery, as nearly to resemble serum tinged with the colouring matter of blood; and it is highly probable, that there is a near affinity between these bloody tumours, and some of those of a watery character, which are occasionally found in the same situation. The blood, it is reasonable to infer, becomes more and more deteriorated the longer it is confined, and should the disease be allowed to continue until the bony structures become involved, the fluid will be rendered still more unhealthy, and may acquire an offensive odour. It may even become divested of its sanguineous character, by suppuration taking the place of the hemorrhagic action, and converting the tumour into a purulent abscess. We could cite cases in confirmation of this statement, and amongst others, we might adduce the one reported by Michel, which has been already referred to.

As regards the precise situation of the fluid, and its relations with the component parts of the scalp, and the subjacent bone, much difference of opinion has been expressed. By Oslander, Naegele, Zeller, Carus, Chelius, and Pigné, it is affirmed that the fluid is always deposited between the pericranium and skull; Dieffenbach thinks that it is lodged between the pericranium and the integuments of the scalp, in which opinion some other writers concur; while Velpeau, taking a more correct view of the subject, thinks it may occupy either of these situations, or be even more profoundly situated, in the diploë of the cranium, or between the dura mater and bone, as represented by Hoere. Our own observations induce us to concur fully in this sentiment. In one of the cases which we had an opportunity of witnessing, the pericranium was not detached from the bone, but was much thickened, and the fluid was deposited between it and the aponeurosis of the occipito-frontalis muscle. In another, we are inclined to think that it was superficial to this aponeurosis, and between it and the skin of the scalp. The cases in which it occupies the diploë, or rather commences in that structure, must be exceedingly rare, notwithstanding it was contended by Michaelis, that the disease always depends upon the destruction of the outer table of the bone, and that the collection of blood is a consequence merely of that affection.* He was probably misled in some cases, by the abrupt, prominent, indurated boundary referred to above, which from its uneven hard feel, he mistook for the rugged border of the diseased bone. But although he may have been deceived in this way, there are unquestionably cases of the kind represented by him, and many who have treated of the subject subsequent to his time, have committed an equal error, in denying the existence of such an affection.† Some of them, it is true, have admitted that bloody tumours sometimes form in the diploë, but they affirm that there is no analogy between them

* Loc. cit.

† Loder's *Journal für Chirurgie*, bd. ii. p. 660. Jen. 1799. And Hufeland's *Journal*, bd. iii. p. 81. 1804.

and the disease under consideration. This sentiment has been expressed by Oslander,* and others have described such an affection of the diploë, as a disease altogether dissimilar in its nature. It differs, it is true, in some particulars, from the common sanguineous abscesses of new-born children, as that disease has been generally described; yet when the pathological characters of the two affections are taken into account, we question much the propriety of considering them as entirely distinct. At any rate, we regard their affinities as sufficiently strong, to entitle them to be grouped under the same head, and we shall, in accordance with this view, and nearly in pursuance of the plan adopted by Velpeau, divide sanguineous abscesses, or tumours of the head, into five orders, according to the depth at which the fluid is situated.

a. *Sanguineous abscesses seated between the skin and the aponeurosis of the scalp.*—When the fluid is deposited between the skin of the scalp and the epicranial aponeurosis, as it is more superficial and least apt to become diffused, it forms the most simple of all the varieties of the disease, and does not involve any serious consequences. Such tumours are of more frequent occurrence than either of the other varieties, and may be easily confounded with others, which form in consequence of the pressure sustained by the head of the child during labour, or of injury inflicted by the forceps or other instruments employed to assist that process. These latter swellings, however, denominated by the German accoucheurs *caput succedaneum*, are very different in their nature, and may be easily distinguished by characters to be pointed out, when we come to speak of the diagnosis of the disease. As the union between the integuments of the scalp and the aponeurosis of the occipito-frontalis muscle is exceedingly compact and resistant, when the blood accumulates in this situation, it diffuses itself with great difficulty, and such tumours are consequently, generally small, rounded, prominent, convex upon the surface, and surrounded by a well-defined hard elevated border, such as is felt in those bloody tumours which are so often produced by blows on the head. When the accumulation has existed for some time, the walls of the cavity become very much indurated, and sometimes acquire a consistence almost fibrous in its character. In this state, they do not suppurate readily, and after the bloody fluid has been evacuated, a kind of serous or lymph exhalation, either colourless or of a wine-lee hue, takes place into the cavity. As the deposit of fluid is not in a state of proximity with the bone, these superficial bloody abscesses are not apt to give rise to any serious consequences, and may be dispersed by proper discutient applications, or readily cured, by evacuating their contents. We witnessed a case of this kind a few years ago, in a youth of five or six years old, in consultation with our friend Professor Holbrook, of Charleston. The tumour, which occupied the parietal region, was laid open and covered with a soft poultice, after which it healed from the bottom without any difficulty.

b. *Sanguineous abscesses situated between the aponeurosis of the occipito-frontalis and the pericranium.*—It is more particularly to this variety of the disease, that Naegele and Zeller have appropriated the appellation *cephalæmatoma*; although, as previously remarked, they affirmed that the fluid is deposited between the pericranium and bone. We are

* Handbuch der Entbindungskunst, bd. ii. abth. 2. p. 214. Also in Abhandlungen und nachrichten, p. 235. 8. beschreiben. tab. 1. fig. 5. Tübingen. 1787.

inclined, however, to think with Dieffenbach, that the affection to which their description applies, is seated between the aponeurosis of the muscle and the pericranium. There are here several circumstances to impress upon the tumour different characters from those which appertain to the first variety of the disease. The strong aponeurosis of the occipito-frontalis muscle is spread out upon a considerable portion of the top and lateral parts of the head; it is so loosely attached by cellular tissue to the pericranium beneath, as to glide upon it with great freedom; and the proximity of the disease with the surface of the bone, renders it much more liable to give rise to serious consequences, than when it is situated more superficially. In proportion as the blood accumulates beneath the aponeurosis, it is resisted by it in its tendency to protrude towards the surface; but in the direction of the circumference, it dissects up the loose cellular tissue which unites the aponeurosis to the pericranium with great facility, and diffuses itself extensively between the two structures, and over the surface of the head, until its further progress is arrested by a solid barrier, in form of the indurated border already adverted to, which is set up by the process of adhesive inflammation. In consequence of these conditions, such tumours are more flattened and expanded than the preceding, less prominent, and very often less accurately defined; for although they are generally limited by the hard prominent boundary described, this is not constantly the case, and instances sometimes occur, in which, as represented by Naegele and Zeller, no such barrier exists, or if it is present, it is confined to a limited portion of the circumference of the collection, so that the fluid may continue to diffuse itself where it meets with the least resistance, until it becomes spread out, irregularly, over a large extent of the top or lateral part of the head. The interposition of the aponeurosis, likewise, renders the fluctuation more obscure, and when the fluid is allowed to remain too long, the same influence disposes the mischief to extend to the pericranium and bone, and to give rise to caries and exfoliation of the latter, and sometimes to the death of the patient. Before these changes are induced, others take place in the structures which form the immediate walls of the cavity. They become thickened and indurated; undergo, in protracted cases, considerable transformations of texture, acquire an imperfect pseudo-membranous lining, and occasionally take on the character at some points, of fibro-cartilage, or even bone. In a very afflicting case which we had occasion to attend a few years since in consultation with our friend Dr. Stuart, of Baltimore, and which terminated fatally, the abscess had the tendinous aponeurosis of the occipito-frontalis muscle spread over its surface, and was diffused over nearly the whole top of the head. The inner surface presented an uneven mammillary appearance, apparently produced by a compact, yet somewhat spongy, vascular substance, apparently of adventitious development. The cavity was likewise lined by a thin adventitious membrane, such as forms in common abscesses of long standing, upon which the vessels of the new substance just adverted to, seemed to ramify. The aponeurosis could be distinctly traced over the whole surface of the tumour, and to its lower face, the peculiar product which formed the principal part of the walls of the cavity adhered very intimately.

It is this mammillary texture, that in more advanced cases sometimes becomes transformed into a kind of ligamentous, fibro-cartilaginous, or even a bony texture; and cases have been reported, in which the last transformation was observed upon the cranial surface of the cavity at birth, or a

very short period subsequent, thus corroborating the opinion of Siebold, Osiander, Michaelis, Pigné, and others, that sanguineous tumours, in some cases at least, form anterior to the time of delivery. The hard prominent contour which so generally surrounds the whole circumference of the tumour, is also sometimes of a bony consistence; and if we are to believe the assertions of Michaelis, Naegele, Zeller, and many others, it very generally presents this character. We are inclined to think, however, that their inferences have been drawn more from the sensation imparted to the touch, than from absolute dissections, and that although it is sometimes osseous, it is far more frequently a mere condensation, or consolidation of the adjacent tissues. This is rendered probable by the facility with which it disappears after the tumour has been opened, which would not be the case if it were of an osseous consistence. It should nevertheless be remarked, that the aponeurosis of the occipito-frontalis muscle sometimes becomes ossified, converting it into a thin bony arch, extending over the whole surface of the abscess, which is situated beneath. The only well authenticated case of this kind which we have met with, is one reported by Chelius.* He represents, that the *pericranium*, which was elevated by the tumour, when pressed, imparted to the finger the sensation of an elastic metallic plate, and a manifest feeling of crepitation. The *pericranium*, which is here represented to have been the seat of the transformation, could not have been separated and elevated from the bone to such an extent, without rupture, consequently, could not have been the part involved in the change. It is much more likely, that the part affected was the tendinous aponeurosis of the muscle, the situation and texture of which would render it much more liable to experience such an alteration. The case, at all events, is one of great interest, since it shows how an affection of this kind might be readily mistaken for a disease having its origin in the diploë of the skull, and separating the outer from the inner table of the bone. It is indeed not improbable, that both Michaelis and Osiander may have been deceived in this manner, in some of the cases which they have reported.

As the *pericranium*, in this variety of the disease, is interposed between the fluid and the bone, the latter does not generally become much affected, except where the tumour has existed for a long time, and an early opening is not made to evacuate the blood. The protective influence of the *pericranium* is, indeed, sometimes augmented, by its acquiring increased thickness, and undergoing other changes. Still the outer table of the skull is occasionally affected with necrosis or caries, and if the disease be allowed to continue, the walls of the cranium may be completely perforated, exposing the parts within, and imparting to the disease a fatal character. Michaelis, as has been previously remarked, pretended to have found disease of the bone in all cases; but although he was certainly wrong in making this sweeping inference, several such cases, well authenticated, have been reported by others, some of which, no doubt, were examples of this variety of the affection.

c. *Sanguineous abscesses between the pericranium and the bone.*—It was remarked above, that Osiander, Naegele, Zeller, Carus, Chelius, and Pigné, considered this the proper seat of the abscesses in question in all cases; at least, only a few of them admit that the fluid may be deposited

* Handbuch der Chirurgie, bd. ii. p. 193. Leipzig, 1829, und Heidelberger Klinische Anallen, bd. iv. heft. 4.

elsewhere. Velpeau, on the contrary, influenced by the intimate connection of the pericranium with the bone, and its liability to rupture, rather than yield to the distending influence of the accumulation, thinks this form of the disease must be exceedingly rare, although he does not deny its existence. We have no doubt that many of the cases supposed by the individuals, whose names have been mentioned, to be of this character, were examples of the variety last described; yet when we consider the numerous minute vessels which pass from the pericranium into the substance of the bone, we can easily conceive how sanguineous deposits may form here, more readily than supposed by Velpeau. Such a variety of the disease would of course be much more formidable than either of the preceding, because of the immediate contact of the fluid with the denuded bone, and the almost inevitable implication of the latter in necrosis or caries in consequence of these relations, especially when the fluid is not early absorbed, or when a timely puncture is not made to allow it to escape. Some of the cases observed by Michaelis may have been of this kind, and it is highly probable, that in many of the examples observed by Paletta, Osiander, Naegele, Zeller, Chelius, Dieffenbach, and others, in which the bone was found diseased, the fluid was deposited between the pericranium and the bone. Still, it does not necessarily follow, that this was the case in all of them; because, the bone may likewise become affected in some of the other varieties of the disease. The extent to which the bone may be involved in such cases, is variable. Sometimes the affection is very slight, consisting, merely, of superficial caries and exfoliation; occasionally the outer table becomes necrosed and is thrown off; and in some rare instances the entire thickness of the skull is detached, and exposes the dura mater beneath. Examples of this kind have been reported by authors, and were it necessary, several which terminated fatally might be referred to. It is evident, that much difficulty would be experienced, during the life of the patient, in distinguishing this variety of the disease from the preceding, or even from that which originates in the diploë. Fortunately, this is not often a matter of much moment so far as the first is concerned; but it may be sometimes important to discriminate between this form of bloody tumour and those which form in the diploë, because, as we shall have occasion to explain, there are some of the latter which it would be unsafe to puncture.

d. *Sanguineous tumours of the diploë of the skull.*—It may admit of a question, how far bloody tumours which are developed in this situation agree in their fundamental characters with those described above. Michaelis affirmed, that the affection which is the special subject of these observations, always consists in a destruction of the outer table of the cranium by necrosis or caries, and that the accumulation of blood beneath the pericranium is a consequence merely of this condition. Osiander likewise, while he objects to the inference of the author just quoted, alludes to a form of bony tumour of the cranium, which is sometimes congenital, in which a morbid growth takes place in the diploë, altering the structure of the outer table, and elevating that portion of the bone, but never destroying it.* Chelius, however, in considering these cases, remarks; that the first have been mistaken by those who have observed them, and that although apparently situated in the diploë of the bone, they in reality occupy the space between it and the pericranium, and what was mistaken for the

* Handbuch der Entbindungskunst, bd. 2, th. 2, p. 214.

outer table was the pericranium in a state of ossification. We can conceive such a mistake possible, yet there is incontestible evidence that tumours of the kind do sometimes form in the diploë, and give rise to all the consequences which have been attributed to them. Still the question recurs, are they identical in their nature with those which form in the tissues of the scalp, and between them and the bone? They certainly agree in some of their characters, yet in others they present a marked contrast. Both tend to destroy the bone; both may exist at birth or form shortly afterwards; and both are filled with blood; yet when those of the scalp are laid open, they do not continue to bleed after their contents have been discharged, while some of those of the diploë, under the same circumstances, pour out blood so copiously as to endanger or destroy the life of the patient. The organisation of the diploë explains, to a certain extent, this striking peculiarity. The reticulated structure between the two bones is not only supplied abundantly with arteries, but as has been demonstrated by Dupuytren and Breschet, is likewise traversed by numerous veins of large size, which anastomose freely with each other, and form an intricate venous plexus within the bony texture. These vessels communicate freely by numerous small branches through the two tables of the skull, with the vessels of the scalp on the one hand, and on the other with those of the meninges, and also with the great sinuses of the latter. We apprehend, therefore, that most of the bloody tumours which form in the diploë have their origin in a kind of varicose condition of these veins; that in proportion as the tumour increases in size, the tables of the bone are forced asunder or destroyed; that they are, in short, proper erectile, or aneurismal tumours, and owe to this circumstance their faculty of pouring out blood to such an alarming degree when opened. We could refer to numerous cases reported both by the early and recent writers in confirmation of this view; and if all the examples which have been recorded under the appellation of fungus of the dura mater, hernia cerebri, &c. could be carefully analysed, it is probable that many of them would be found to be instances of erectile tumours, or aneurisms developed within the diploë of the skull. This affection of the bones of the head has not, so far as we know, been properly described by writers; but tumours of the kind are not peculiar to this class of bones: they likewise form in the bones of the trunk and extremities, and the records of the science contain numerous examples, the nature of which has not until recently been understood. To this class ought probably to be referred the cases reported by Fabricius Hildanus,* Ruysch,† Pearson,‡ Else,§ Lassus,|| Freer,¶ Boyer,** Pelletan,†† Scarpa,‡‡ Lallemand,§§ and several by Breschet,||| the last of whom has published a very able memoir on the subject of sanguineous tumours of the bones. Some of the cases reported by Paletta ought,

* *Observat. et curat. Chirurg.* Cent. ii. Obs. xxvi.

† *Observat. Anat. Chir. Observ.* lxxxi.

‡ *Medical Communications.* Vol. xi. p. 95. 1700.

§ *Medical Observations and Inquiries.* Vol. iii. p. 169. 1769.

|| *Pathologie Chirurgicale*, tome i. p. 489.

¶ *On Aneurism*, p. 28.

** *Traité des Maladies Chirurgicales*, tome iii.

†† *Clinique Chirurgicale*, tome ii. p. 14.

‡‡ *Sull' Aneurism.*

§§ *In Breschet Repertoire d'Anat. et de Physiologie*, tome ii. p. 137. 1826.

||| *Ib.* p. 142—178. From this we select the above references.

perhaps, to be included under the same head,* but as our observations are intended to be confined to those which affect the head only, we shall not discuss this point.

Assuming the proposition, that a majority of those sanguineous tumours which are developed in the diploë, consist of a dilated condition of the venous or arterial plexus of that structure, we can easily comprehend why they bleed so profusely when punctured; the free communication between these veins and the great sinuses of the brain, as well as their intimate connection with numerous other vessels, being amply sufficient to account for this hemorrhage. The great facility, moreover, with which these veins become distended, the enormous extent to which they are capable of being dilated, and the encroachment which they must consequently make, when thus affected, upon the tables of the skull, and after these have been destroyed, upon the scalp, the meninges, and the brain itself, likewise explain the general phenomena of the disease and its fatal tendency. Should the outer table of the cranium first give way, the tumour will protrude outwards, and may attain a very great size, by forcing the pericranium and scalp before it; and in some cases of this kind, especially when the inner table of the bone is likewise destroyed, the tumour will present a pulsation isochronous with that of the brain. A pulsation is, moreover, sometimes perceptible, even though the brain may not be exposed; but this pulsation corresponds with that of the arteries. Should the inner table of the skull give way first, or yield more readily than the external, then the tumour by protruding inwards, will encroach upon the brain and its coverings, and give rise to convulsions, paralysis, and death. Sometimes, indeed, when the walls of the cranium become completely perforated, and the tumour attains a considerable size, it assumes all the appearances of congenital hernia cerebri, may, like that disease, be forced into the cranium by pressure, and cannot be easily distinguished from it.

In some instances, however, the diseased growth does not succeed in breaking up the bony tables, but forces them asunder, and forms for itself a bed in the interstice. An interesting case of this kind is reported by Velpeau, on the authority of Lauth. It was that of a young man, who received a blow with a cane on the parietal region. The immediate effects subsided in a few days, but two months subsequently, he was seized with violent pains at the opposite point, and the trepan was applied without discovering any thing. On examination after death, which speedily followed the operation, a flattened fungous mass, of the size of a nut, was found encysted, as it were, in the diploë corresponding to the point upon which the blow had been received.†

e. *Sanguineous tumours which form between the cranium and dura mater.*—That variety of these tumours which has received the appellation of fungous of the dura mater, has been more particularly described than either of the preceding. Yet there are many affections to which this term is applicable, that do not fall within the scope of our observations, they being of a character entirely different from those tumours which it is our object to describe; nor does it comport with our plan to consider those extravasations of blood which take place in this situation in consequence of violence inflicted upon the head. Velpeau, however, seems to think, that deposits of blood not unfrequently form at this point during labour, and

* See *Exercitationes Pathologicae*, Pars ii. 188—213.

† *Journal Universel et Hebdomadaire*. Octobre, 1833.

subjoins that he had himself witnessed two examples. If the assertion of Cruveilhier be well founded, that at least one-third of those infants which, healthy and vigorous previous to delivery, die of apoplexy during that process, the opinion of Velpeau would seem to be entitled to confidence.

It is likewise possible for erectile tumours, analogous to those already described, to have their origin in the space between the cranium and dura mater, and it is highly probable, that many of the cases which have been described as examples of fungous of the dura mater, and congenital hernia cerebri, were instances of such erectile tumours. In some rare instances, those tumours have been found in a state of communication with the sinuses of the brain internally, and with the scalp externally, through one or more apertures in the cranium. A very singular case of this kind has been described by Dr. Flint.* It was in a child three weeks old, upon the posterior portion of the head of which, a circumscribed fluctuating tumour was discovered, of the size of a pullet's egg, which, increasing in size, and threatening to rupture, was punctured with a lancet. Blood flowed from the puncture, and in a few minutes it ceased to bleed; but hemorrhage took place from the part at intervals during the ensuing night, which could not be suppressed, and the child died from loss of blood. On laying open the scalp, a dense coagulum of blood was discovered, covering the occipital bone, and thinly spread beneath the expansion of the occipito-frontalis muscle. The middle of the occipital bone was found denuded, rough, and spongy, to the size of a cent piece, and was perforated, immediately under the base of the tumour and opposite the point at which the longitudinal divides to form the two lateral sinuses, by several small apertures, through which blood was made to flow freely by compressing the head. From this it appears, that the tumour was fed, through these openings, by the sinuses of the brain. Dr. Flint thinks, that the disease of the bone existed before the formation of the tumour; but this is not very probable, and it is much more likely that the tumour had its origin in a varicose state of the blood-vessels, which traversing the bone, impressed upon it the alterations presented by it after death.

A case is also described by Busch, which was observed in a child that had been some time dead and was delivered with the forceps. Situated over the occipital region was a bluish coloured bloody tumour, which, when it was opened, was found to communicate with the sinuses of the brain.† One is likewise reported by Hoere,‡ in which there were two tumours; one internal between the dura mater and the bone, the other between the latter and the pericranium, with a diseased condition of the intermediate portion of the cranium. The internal tumour was of the size of a pigeon's egg, and had formed for itself a kind of depression in the corresponding portion of the brain. The internal table of the bone, opposite to it, was diseased, and destroyed to some extent, but the process of reparation had commenced. The outer table was entire, and unaltered.

These are the principal characters and varieties of this peculiar form of disease. The influence exercised by it over the general health must of course be variable, according to the condition of the tumour, its relations with the adjacent parts, and the susceptibility of the organisation. Very

* New England Journal of Medicine and Surgery. Vol. ix. p. 112. 1820.

† Heidelberger Klinische Anallen, bd. ii. p. 245.

‡ De tumore cranii recens natorum sanguineo et externo et interno, &c. Berol. 1824.

generally, there is little or no constitutional disturbance observed during the first stages of the disease; but after the tumour has continued for some time, the child is apt to become pallid, feeble, and heavy; it loses its natural sprightliness; has its digestive organs more or less disturbed; is restless and uneasy, especially during sleep; and in some cases, is affected with flushing of the face, and irregular febrile exacerbations. Gælis remarks, that even in a recent case, he found the child affected with a kind of confusion or stupor; and it not unfrequently happens, after the disease has made considerable progress, that various nervous symptoms make their appearance, which arise either from the direct influence of the tumour on the brain, or from irritation excited by its being reflected upon the nervous centres. These symptoms may vary, from slight twitchings to violent convulsions, or even paralysis. Such cases are generally attended with active febrile excitement, associated with the phenomena of arachnitis or inflammation of the brain. It should be remarked, however, that these phenomena are seldom or never observed until towards the last stages of the disease, and it is likewise only at this period, that evidences of compression of the brain, and inflammation of the dura mater become apparent; these symptoms owing their existence in such cases to the diseased changes which take place in the bone and the adjacent structures. In some instances, nevertheless, the ravages of the affection are more insidious in their march, creating but little disturbance until a considerable portion of the bone has become destroyed, and allowing extensive perforation of the skull to be produced before death takes place. Paletta, Nægele, Osiander, Kopp and others have observed cases of this kind. But while some examples of the disease are attended with some or most of these symptoms, there are others, which, until they are far advanced, give rise to no uneasiness or derangement, either general or local. Yet it may be laid down as a general rule, that whatever may be the condition of the patient during the first stages of the disease, the constant tendency is to a fatal termination, if the fluid be not absorbed, or evacuated by art.

3. *Causes and nature of the disease.*—Those who have had occasion to observe sanguineous tumours of the head of newborn infants, have found it difficult to assign any satisfactory cause for their development. From some characters which they possess, in common with those bloody tumours or ecchymoses which form in the same situation in consequence of contusions, writers for a long time adopted the opinion that they owe their origin to some injury sustained by the head of the child during labour, either from pressure within the straits of the pelvis, from the contusion occasioned by the forceps or vectis, or some analogous cause. This opinion has been perpetuated by the neglect of many to discriminate between the proper cephalæmatoma, or spontaneous bloody tumour, described by several of the German authors, and those which are in reality only examples of ecchymosis produced by violence. This cause has been assigned by several respectable practitioners, amongst whom Dieffenbach enumerates Becker, Carus, Capuron, Wendt, and Osiander, and we may add to this list Velpeau and several others of high respectability. There are several circumstances which invalidate such a conclusion.

The tumours in question are not oftener met with in difficult labours, and those in which instruments are employed, than they are after easy and quick deliveries. Palletta* remarks, that he had never seen them after

* Op. cit. 123.

difficult labours. Naegele, who observed seventeen cases in the course of twenty years, declares, that in a large proportion of them the labour was easy, and the tumours occupied those parts of the head that was least liable to be compressed or injured in its passage through the pelvis. He observed, besides, one case, in which the child was delivered by the feet, and others have been reported which occurred in breech cases. Siebold never saw them after difficult labours; Baudelocque seldom, and such, likewise, is represented to have been the result of the experience of Feiller, Hoere, Michaelis, and Schmidt.* To this it may be added, that bloody tumours of a similar character occasionally form on the head of children at a more advanced age, and sometimes even in the adult, when no injury whatever has been inflicted. In neither of the cases which we have had an opportunity to observe, could the disease be referred to this cause, inasmuch as after the strictest inquiry it could not be ascertained that the subjects of them had received either blow or contusion, or any other injury upon the head. It is besides known, that sanguineous abscesses occasionally form in other parts of the body not exposed to the influence of violence. Paletta has reported many such examples, and several others might be referred to, which have been published by different individuals.

The facts prove conclusively that the disease cannot be properly attributed to the cause referred to above. Injuries of the kind alluded to may unquestionably give rise to extravasation of blood in the scalp, but it will be found on examination, that such tumours differ essentially from those which form the subject of these observations. They are attended with more or less discoloration of the skin; they disappear in the course of a few hours, and are not attended with the hard elevated boundary which generally circumscribes sanguineous abscesses of the head. That the long continued resting of some part of the head of the child upon the brim of the pelvis, before labour comes on, may sometimes predispose to the affection, we will not deny, yet this is a different question from that under discussion.

The hypothesis of Michaelis already alluded to, that the disease has its origin in the destruction of the outer table of the cranium, and that the collection of blood is a consequence merely of that affection, is refuted by so many facts, that it cannot be necessary to do more than advert to it. It should nevertheless be remarked, that when the tumour has its origin in the diploë, no collection of blood takes place in the scalp, until this destruction of the outer table is accomplished. But while this is admitted, it only proves, that the injury of the bone is a consequence and not the cause of the disease. Nor is the conjecture of Baudelocque, that the extravasation of blood is a salutary act, the effect of which is to protect the brain from dangerous congestion or apoplexy, entitled to more confidence. Naegele at one time attributed the origin of the disease to a varicose state of the emissary vessels of the cranium, in consequence of which they become ruptured during parturition; but he afterwards abandoned this opinion as untenable. Pigné also seems to think they are owing to a rupture of blood-vessels, but he affirms that this rupture takes place spontaneously. In proof of this, he appeals to the authority of Baudelocque and Cruveilhier, who remark, that fœtuses are often destroyed by a vessel giving way within the cranium, even before the period of delivery.

Amidst these conflicting opinions it is exceedingly difficult, without

* Pigné, *Journal Hebdomadaire*, Sept. 1833.

more positive data than we possess, to arrive at any very satisfactory conclusion.

4. *Diagnosis.*—The affections with which these tumours are most frequently confounded are, the extravasations of blood in the integuments of the cranium, or the puffy ecchymosis of those parts, which form in consequence of injury sustained during labour, and which the Germans have denominated *caput succedaneum*. It is by neglecting to distinguish them that many writers have been led into the error of attributing them all to contusions inflicted upon the head of the child in the act of delivery. A proper attention to the symptoms peculiar to the two affections will render it easy to avoid mistaking one for the other. In the *caput succedaneum*, or tumours which proceed from contusion, there is a kind of infiltration of blood mixed with serum; the tumour is diffused, presents a dark livid colour; is œdematous and pits on pressure, is devoid of the well defined border which circumscribes the proper sanguineous abscess, and does not present the pulsation which sometimes exists in that disease. In some cases, however, especially when the fluid is deposited between the aponeurosis and the pericranium, or between the latter and the bone, the diagnosis will be more difficult. Still, the surrounding œdema, the absence of the prominent defining barrier, the discoloration of the skin, &c. will generally furnish sufficient data to prevent, in a great degree, an erroneous conclusion. The same marks will serve to distinguish sanguineous tumours from those containing water, which sometimes form in the same situation. Purulent abscesses may be generally distinguished by the inflammation, redness, great tenderness, and other symptoms with which they are almost always associated.

If in accordance with the plan we have adopted, bloody tumours of the scalp, and those of the diploë and parts beneath, be grouped together, it is probable that the same explanation will not hold good in reference to the formation of the whole of them. At least, there may be a slight difference in the pathological condition of the superficial and deep-seated tumours—although it may not be sufficiently great to constitute them totally distinct affections. And it may be remarked, that those which form in the diploë cannot well take place in the fetal head, inasmuch as at that early period of life the two tables of the cranium are so close to each other that the diploë scarcely exists. Whatever may be the difference in the seat of the disease, there can be but little question that it consists primarily in a morbid condition of the capillary blood-vessels, and the cellular tissue through which they ramify. All who are conversant with the laws of the animal economy are aware, that under the influence of certain grades and modifications of irritation, the vessels pour out blood, instead of coagulable lymph, serum, pus, or any of the other products which they deposit under different degrees of the same process. It is difficult to determine, however, whether the collections in question have their origin in this manner, or whether the radicles of the veins, at the points at which the arteries inosculate with them, do not first assume a varicose condition, such as they present in erectile tumours, and afterwards give way, extravasating their contents in the meshes of the cellular tissue. We are inclined, from the general phenomena of the disease, to infer that both these explanations are correct, though applicable to different cases. The first is certainly the most rational, when applied to those tumours which are superficial; yet there are others in which it seems incompetent to explain all the phenomena. This is especially true of those which form between the pericra-

nium and bone, and in the diploë of the cranium. It has been remarked above, that in some cases a considerable pulsation or thrill can be felt in the tumour during its early stages, which disappears as the disease progresses. This cannot be very well explained upon the supposition of a mere hemorrhagic action of the capillary vessels, but is in every respect analogous with the phenomena presented by erectile tumours. The reason why the pulsation disappears at a later period probably is, that the delicate vessels being over distended, their tunics give way, and extravasate their blood, and afterwards undergo such changes as to destroy their pulsation. Such dilatations we conceive may take place in either the arterial or venous portion of the anastomosing vessels, or in both, precisely as the same thing is observed in erectile tumours in other parts of the body. But if this explanation is probable as regards those tumours which form exterior to the cranium, it is unquestionable when applied to such as are developed in the diploë. The cases reported by Flint, Hoere, and Busch, which have been already referred to, were probably of this kind, and the very valuable memoir of Breschet, previously quoted, contains numerous examples of erectile tumours or aneurisms, affecting other bones. Here the vessels are more protected by the bony casement in which they are lodged, the process of dilatation goes on more tardily, and they do not so soon give way. Hence, such tumours, when opened, generally bleed profusely, because the affected vessels have not yet had time to undergo those changes which are so speedily effected in soft parts, and which disqualify them, in the latter situation, from pouring out blood so freely.

Be this as it may, the cellular tissue also undergoes important modifications. It is destroyed, or has its meshes forced asunder at the point at which the extravasation takes place, while in the vicinity, coagulable lymph is deposited in its areolar arrangement, and becoming organised, sets up a barrier against the diffusion of the fluid, which forms the indurated circle or boundary already alluded to. This is precisely what takes place in common purulent abscesses, and it will be found, on examining the cavity of one of these bloody tumours which has existed for some time, that it, like a common abscess, is lined by a complete adventitious pellicle or membrane, which is either very vascular itself, or has a complex intertexture of minute blood-vessels ramifying exterior to it. This membrane may pour out blood, or serum, or pus, according to the degree of irritation which may happen to exist in the walls of the tumour; and all these fluids may be deposited by it in the course of the disease. Hence, when such tumour is laid open shortly after it has formed, it generally discharges pure blood; at a later period blood and serum will often be evacuated, and if it be allowed to remain unopened, it may become the seat of a purulent deposit, as in Michel's case, to which we have referred above.

Assuming these as the pathological conditions of the disease, it is not easy to explain the causes which dispose the parts to take on such changes or modifications of action. It is possible that the resting of the head of the child upon the bony parts of the brim of the pelvis, during the last weeks of gestation, may be the cause in some cases; and that in others, the pressure it experiences during labour may excite sufficient irritation to produce the disease. Many other circumstances may have some instrumentality, but as any remarks we could make in regard to them would be purely conjectural, we shall not enumerate them.

Much more difficulty will be experienced in distinguishing sanguineous tumours from congenital encephalocele, or hernia of the brain. Owing to

the uncertainty of the diagnosis between these two affections, they have been often confounded, more especially by some of the earlier writers on the latter of these two diseases, who described cases as examples of encephalocoele, which, from their own representation, we cannot avoid concluding were nothing more than instances of sanguineous abscess. This mistake was committed, as Naegele and others have remarked, by Le Dran and several of his successors, especially Trew, a writer in the *Gentleman's Magazine*, Detharding, Chemin, Corvinus, Gaspard, Siebold, Held, Salle-neuve, Thiernig, Ohme, Breiting, Richter, Rosen de Rosenstein, Bernstein, Fleisch, Plenk, Schmalz, Henke, &c. A reference to all these authorities will show that they considered the parietal region as the most common seat of congenital encephalocoele, while it is well known to all practitioners of the present day, who are conversant with such affections, that they are seldom developed, except in the course of the sutures, at the anterior or posterior fontanelle, or in the situation of some of those points which, during the first periods of the ossification of the cranium, are not supplied with bone. This fact then, together with one adverted to in a preceding part of these observations, that sanguineous abscesses are developed by far more frequently over the parietal bone than upon any other part of the head, renders it highly probable that a very large proportion of the cases considered by writers as examples of what they called *lateral* congenital encephalocoele, were nothing more than sanguineous tumours of the parietal region.

The difference observed in the locality of the two affections may afford some assistance in distinguishing them, but cannot be regarded as affording sufficient grounds for a positive diagnosis, since, as has been remarked, sanguineous tumours are sometimes developed in the course of the sutures, and upon other points which are liable to hernia of the brain. Far better criteria may be deduced from the phenomena furnished by handling the tumour, from the condition of its surrounding boundary, &c. Both are soft and spongy to the feel, and impart to the touch the sensation of a depression or defect of the corresponding portion of the cranium. Both are likewise often attended with pulsations which are isochronous with those of the heart; and in the one, as in the other, a hard well-defined border can be generally felt, which surrounds the entire circumference of the tumour. Thus far they seem to agree in most of their characters; but if these phenomena be carefully analysed, it will be found that there are many points of difference. Thus, when pressure is made on a congenital encephalocoele, the tumour can be often forced down through the opening by which it protrudes through the cranium, upon the substance of the brain; but so soon as this is done, the individual will be affected with vertigo, dimness of vision, loss of consciousness, or even convulsions. Sanguineous tumours cannot be made to disappear by this procedure, nor do they, when compressed, give rise to the symptoms alluded to. If the march of the disease be carefully observed, there can be no danger of the hard prominent boundary leading to an erroneous diagnosis, inasmuch as in encephalocoele it must always exist before the tumour can protrude—the destruction of the entire thickness of the bone being necessary to allow this event to take place; whereas in the case of the other affection, the tumour always forms first, and the hard boundary, or as it has been generally called, the bony circle, is only developed in consequence of the influence exercised subsequently upon the adjacent portion of the bone. Besides, when pressure is made upon the centre of the tumour, if it be encephalocoele, the finger will

pass down without meeting with any solid resistance, while in cases of sanguineous tumours, it is soon arrested by the solid rough surface of the bone. Although pulsation is a character common to both affections, it is feeble in sanguineous tumours, and is only present during the earliest periods of their existence, whereas in *encephalocele*, it is much stronger, and never entirely disappears.

There can seldom be much difficulty in distinguishing sanguineous tumours from fungus of the dura mater, the latter being destitute of fluctuation, and when forcibly compressed, giving rise to those symptoms which indicate pressure on the brain. Erectile tumours, however, developed either upon this membrane, within the *diploë* of the cranium, or between the bone and the pericranium, cannot be so easily distinguished, either from simple bloody abscesses, or common fungus of the dura mater.

5. *Treatment*.—The treatment of sanguineous tumours of the head may be attempted by two different methods. The first has for its object the dispersion of the tumour by promoting the absorption of its contents; the second, the evacuation of the blood by puncture or incision.

The first method should always be fully tried previously to resorting to the second. Experience has proved satisfactorily, that a large proportion of these tumours will either disappear spontaneously, after the lapse of some time, or may be dispersed by proper local treatment; and as long as any hope of obtaining this result remains, an operation should not be performed. Nearly all writers on the subject have reported many such cases, and in the memoir of Zeller already referred to, a great number will be found. Out of seven cases observed by Beyerle, six were cured in a few days by aromatic vinous fomentations, and it was only necessary to open the tumour in one. Even tumours of very large size may be sometimes dispersed. Zipp reports a striking example: He was called to visit an infant, aged four days, upon the left parietal region of which he found a *cephalæmatous* tumour, as large as an adult fist. It was discovered on the day of delivery, from which time it had continued to increase, but did not seem to affect the health of the child. The mother was healthy, and had had an easy delivery. By means of frictions with aromatic substances, practised night and morning, the tumour was completely dispersed in about four weeks.*

The choice of applications should be regulated by the condition of the part affected, and of the general system. When the child is vigorous, and the scalp, as well as the constitution in general, highly susceptible, antiphlogistics should be preferred. It may be necessary sometimes to apply leeches, and even to repeat them according to circumstances; and in all such cases, cold antiphlogistic discutient lotions may be employed with more or less advantage. The best of these will be the liquor *plumbi subacetatis*, vinegar largely diluted with water, a solution of either the acetate or muriate of ammonia, or any of the ordinary evaporating lotions. The hair should be closely shaved, and a fine fold of linen kept applied to it constantly, wet with the preparation employed. Ice may likewise be occasionally resorted to, but is not often so efficacious as the remedies just enumerated. Indeed most of the German authorities seem to think, that applications of a somewhat exciting character should be generally preferred, their stimulating properties being thought necessary to promote the absorption of the fluid, and produce healthy action in

* Pigné, loc. cit. p. 483.

the part. Hence, they recommend aromatic vinous and spirituous infusions and decoctions, stimulating lotions and unguents, and other articles of a kindred character, either applied lightly to the scalp or administered in form of frictions. When there is great languor and deficiency of energy in the tumour, and in the system generally, such applications are certainly demanded; yet it must not be concealed, that under an opposite state of affairs, they may prove highly mischievous. We are inclined to think, that the application of the warm decoction of oak bark, cinchona, &c. or frictions with mercurial ointment, which have been recommended by Dieffenbach, can seldom or never be admissible. Nor do we think that it will be generally safe to keep up pressure by means of a compress and bandage as recommended by Chelius, although we apprehend that cases do occasionally occur, in which it may be both safe and beneficial.

These means, properly employed, will often disperse the tumour, and effect a perfect cure of the disease. Yet they will sometimes fail, and it will then become necessary to adopt a different course.

It is extremely difficult to decide how far the treatment can be safely confided to those means, the object of which is to obtain the discussion of the tumour, inasmuch as in some cases, the disease has been allowed to continue for weeks or even months, without giving rise to any very serious consequences, while in others, the cranium has become affected with necrosis or caries after the lapse of a very short period. This being the case, much injury may sometimes result from relying too long upon discutient applications, and neglecting to evacuate the fluid by a proper opening. Zeller reports a case corroborative of this principle. A child was born with a very large sanguineous tumour seated upon the left parietal region, the character of which was not understood by the surgeon in attendance, and it was consequently left to the unassisted efforts of nature. The tumour continued to increase in size, became painful, the health of the child suffered considerably, and after the lapse of some weeks, death took place. The bone was found carious, and perforated by a number of small foramina, which traversed its entire thickness.* In order not to incur the risk of these mischievous consequences, it will be advisable, when the ordinary local applications have been employed ineffectually, for eight, ten or fourteen days, to puncture the tumour and evacuate its contents, lest by suffering the fluid to remain too long in a state of confinement, it may occasion disease of the bone, or the health of the child may become endangered by the influence of the disease upon the general system. Upon this point, then, a perfect unanimity of sentiment exists, amongst all who have written on the subject. Some have even advised that an opening should be made as soon as the tumour is discovered, and Osiander thought it should never be delayed beyond twenty-four or forty-eight hours. But to this practice there are two objections. One is, that there are many cases that disappear spontaneously, or may be cured by local applications; the other, that the parts are more vascular during the first periods of the disease, the blood more fluid, and hemorrhage is more apt to take place from the cavity.

There is some difference of opinion as regards the manner in which the contents of the tumour should be evacuated; some giving the preference to the seton, some to puncture and incision, while others advise the caus-

* Pigné, loc. cit. p. 484.

tic. The seton was long since recommended by Moscati; and Paletta advocates its employment in preference to all the other methods. He represents, that it is unsafe to open such tumours by a free incision, but that when they are transfixed by a seton, a cure is easily accomplished without any bad consequences. Notwithstanding this authority, the practice has been abandoned, and has been by some writers very justly condemned.

Gælis advises a stick of caustic to be rubbed upon the surface of the tumour, with the view of promoting suppuration, and exciting the requisite degree of action in the parts. The same plan has been recommended by Schmidt. Of all the means proposed, we hold this to be the most objectionable, and we doubt not, that if generally pursued, it would often occasion serious mischief. In this opinion we are supported by all the best authorities, who, with great unanimity, concur in condemning such a procedure.

Osiander recommends an incision of an inch in length, and down to the bone, to be made with a convex bistoury, in a direction transverse to the course of the ossific radii of the parietal bone. The object of the last rule is, to avoid the danger of inflicting injury upon the brain, by the knife penetrating between these rays, which it might do, if the incision should be made parallel with them. For the same reason, he directs that a lancet, a sharp pointed bistoury, or a trocar, should never be employed for such a purpose, because there is a great risk of puncturing the brain, on account of the extreme thinness of the bone. In prudent hands these precautions can scarcely be necessary, no do we think that any important advantages can be gained by making so extensive an opening. The crucial incision recommended by some can never be necessary, and ought not to be practised.

The best plan is, unquestionably, to make a puncture of an adequate size, at the most dependent point, to allow the contents of the tumour to escape. This is recommended by Naegele, Zeller, Chelius, Dieffenbach, and the best authorities on the subject, and while it secures all that can be gained by making an opening, it is not liable to the objections which apply to the other methods. There are, nevertheless, circumstances, in which it will be necessary to depart from this rule. Thus when the contents of the tumour have been evacuated, a probe should be introduced through the orifice, in order to explore the condition of the bone. If found healthy, a small tent of lint should be introduced into the puncture, to prevent it from closing until the fluid ceases to accumulate within. If the bone be found denuded, rough, and carious, a grooved director should be introduced, upon which the tumour may be freely laid open, if not too extensive; because it will be in vain to attempt to heal it without adopting this precaution. After an opening of sufficient extent has been made, the bottom of the wound may be dressed with a pledget of lint spread with simple cerate, or any appropriate digestive ointment, which should be secured by a compress and bandage, and renewed as often as necessity may require. In ordinary cases, where only a puncture is made, a light compress should be laid over the part, and confined by an appropriate bandage.

It generally happens, after the first evacuation of the tumour, that more or less accumulation takes place. Under these circumstances, the tent of lint should be withdrawn from the puncture, in order to allow the fluid to escape, and if adhesions have formed to such an extent as to prevent it

from flowing, they may be broken up with the point of a probe. After the first evacuation, the blood becomes more and more serous, and is finally supplanted by a kind of watery fluid, of a wine-lee colour, or suppuration takes place, and a small quantity of pus is discharged. In many cases, however, the walls of the cavity gradually adhere, without any pus being formed.

The applications to be made to the part, subsequent to puncture, must be suggested by its condition. Should inflammation and tenderness ensue, they must be combated by cooling anodyne lotions, the application of leeches, and the ordinary antiphlogistic remedies. But where, as is sometimes the case, the tumour remains inactive, and evinces no disposition to heal, its powers must be invigorated by appropriate applications. The Germans generally prefer, for this purpose, warm fomentations of an infusion of aromatic plants in wine, an infusion of chamomile, a decoction of bark, &c. Dieffenbach proposes, also, to cover it at night with an ointment composed of from 4 to 6 parts *unguent. rosat.* and one part *unguent. mezerei.* spread on a light pledget of fine lint. It has even been proposed, when the parts are very indolent, to throw stimulating injections into the cavity, in order to excite adhesive inflammation; and it was partly with a similar view, that Paletta was induced to prefer the seton as a means of opening these tumours. A case has been reported by Lobstein, in which this practice was successfully instituted. The tumour was as large as a pullet's egg, and occupied the left parietal region. Having failed in his attempts to disperse it, the contents were evacuated by a puncture, and stimulating injections were thrown in through the aperture. Slight pressure was afterwards kept up, and a cure was accomplished in a few days.* Cases may occur to demand this practice; yet it should be resorted to with great caution.

A judicious application of these means will generally conduct the case to a favourable issue, without the occurrence of any unpleasant symptoms. The prognosis is indeed generally considered favourable in most cases of this affection, and is seldom otherwise, except where the disease has been allowed, by too long delay, to inflict extensive ravages upon the bone. Most writers, too, represent the opening of such tumours as perfectly exempt from danger, yet we could cite cases in which it was followed by death, even though the bone was not affected. Goëlis, amongst others, speaks of such an occurrence; and Braun reports a case, in which, after a few days, the child was seized with fever and died. In the course of the foregoing remarks, we alluded to a case which a few years since came under our care, conjointly with Dr. Steuart. It was the child of a medical friend, and differed from the generality of such cases in the circumstance, that the subject was about two years old. The tumour was large, and notwithstanding various means were employed to disperse it, continued to increase in size, until it was thought it would not be prudent to refrain longer from opening it. A puncture was accordingly made at one of its most dependent points, and a considerable quantity of watery blood evacuated. As the bone was found to be healthy, a small tent was introduced to prevent the aperture from closing, and cold applications directed to be made to the head. On the second day, the fluid which had accumulated was again evacuated, and the same course was continued. The child, however, became feverish, and was finally seized with violent convulsions and

*Pigné, loc. cit. p. 486.

other evidences of meningeal and nervous irritation, which, notwithstanding the free abstraction of blood, both from the arm and by leeches, the use of cathartics, cold to the head, blisters, &c. continued to recur until death took place.

As regards the treatment of those tumours which sometimes form in the diploë, or within the cranium itself, especially such as are of an erectile character, not much can be done towards effecting a cure. In a majority of instances, if they were to be opened, a fatal hemorrhage would be apt to ensue, particularly where the whole thickness of the cranium is destroyed, so as to deprive us of the advantages of compression. Still we are inclined to think, that in such cases as those reported by Flint and Hoere, and, indeed, in all cases in which the inner table of the skull is entire, if we possessed any positive means of distinguishing them from others, an opening might be safely made, and if alarming hemorrhage should follow, that it might be effectually commanded by a properly adjusted graduated compress. The enlarged vessels would then become obliterated, and the cavity might be healed up by granulation. But before such an operation is resorted to, there should be a certainty that the inner table of the bone is not destroyed, otherwise there will be no solid point, against which pressure can be made, and we should incur the danger of fatal hemorrhage.

This may be regarded as a general summary of our knowledge in regard to these sanguineous tumours of the head. It will be observed that their pathology is still involved in much obscurity, and we are not certain that we have added any thing to render it more intelligible. It may, indeed, be thought that we have erred, in grouping under this head, erectile tumours of the diploë, and parts beneath. We are not satisfied that we have acted with strict propriety in doing so, but we were anxious to direct more attention to them than they have generally received. This, in fact, has been our chief motive for publishing the paper. We are persuaded that most of our readers are not in possession of much of the published information which has a bearing on the subject, especially, as most of the English works scarcely contain any notice of the disease. Hence, if we have not added any thing to increase our knowledge of its pathology or treatment, we may perhaps have rendered them a slight service, by giving them a digest of what others have advanced upon these topics.

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REVIEWS.

ART. XI. *Lectures on the Nervous System and its Diseases.* By MARSHALL HALL, M. D. F. R. S. &c. &c. London: 1838.

Few subjects have of late excited so much controversy, as that of the claims of Dr. Marshall Hall, as the original discoverer of certain new laws in the Physiology of the Nervous System.

We propose to consider, in the first place, what these discoveries are; 2dly, their value; 3dly, the claims of Marshall Hall as discoverer; and 4thly, their application in pathology.

Dr. Hall appears to found his claims not so much upon the institution of a series of new experiments, as upon the inferences he has drawn from the experiments of others, and the perception of truths and results, to which their vision did not extend. It may be remarked, in passing, that such a use of their labours was particularly calculated to irritate those living physiologists, who thus saw themselves deprived of the honour of a brilliant discovery, which they had overlooked, when it lay within their grasp. Hence, it might naturally be expected that they would be inclined either to depreciate the value of the discovery, or, allowing its value, to claim it for themselves.

Dr. Hall begins his lectures by taking a view of the discoveries of other physiologists in regard to the cerebral division of the nervous system. To Sir Charles Bell, he attributes the honour of the *second* discovery in physiology, that of Harvey being of course the first. Mr. Shaw and Mr. Mayo in England, Sign. Bellingeri in Italy, and M. Magendie in France, he alludes to, as having pursued the inquiries which Bell originated.

Bell relates an experiment, in which a rabbit was struck behind the ear so as to deprive it of sensibility, and the spinal marrow exposed. On irritating the posterior roots, there was no motion produced in any part of the muscular frame, but on irritating the anterior roots, there was a corresponding motion of the muscles to which the nerve was distributed. This proved that the *anterior* roots had the power of exciting motion. But Sir Charles Bell made no distinction between *excited* and *voluntary* motion. Müller divided three posterior roots on the left side in a frog, and on the right side all three anterior roots; sensation in the left leg, and motion in the right, were destroyed. On cutting off the right foot, great pain was evinced by motion in all the other parts of the body, while the leg in which the pain was seated, remained motionless. But on cutting off the left foot which retained the power of motion but not of sensation, no pain was evinced. "These experiments," says Müller, "place beyond all doubt the truth of Bell's doctrine." Sir Charles Bell associated the posterior and anterior columns of the spinal marrow, with the posterior and anterior roots of the trifacial and spinal nerves, as sentient and volun

tary respectively. Müller first *traced* and *figured* the third column in the entire length of the nervous system, and professor Grant first (in 1832,) assigned to it its especial *motor* function.

Dr. Hall confirmed by experiment the reasoning of Professor Grant. He took a lobster and laid bare the nervous columns. He first stimulated one of the aganglionic nerves. The muscles to which it was distributed, and *they alone* were contracted. He then stimulated a ganglionic nerve. Muscles both *anterior* and *posterior* to the parts stimulated, were excited into combined action.

According to the present state of knowledge of the *cerebral* division of the nervous system it comprehends,

I. Sentient nerves leading to the posterior roots of the trifacial and spinal nerves, and the posterior columns of the spinal marrow.

II. The cerebrum the centre of the system.

III. The voluntary nerves issuing from the anterior columns of the spinal marrow, and the anterior roots of the trifacial and spinal nerves.

I. *Of the True Spinal or Excito-Motory System.* This is the system to which the discoveries of Marshall Hall appertain. He avails himself of an old and known principle, the *vis nervosa* of Haller, which has been found to exist in the tubercula quadrigemina, spinal marrow and the motor nerves—excluding the brain and nerves of sense, the olfactory, optic, and acoustic nerves—and in the anterior, to the exclusion of the posterior roots of the spinal nerves. Physiologists have supposed that this principle acts *only* in the direction of the branches or fibres of nerves, proceeding *from* their source in the nervous centres, *to* their destination in the muscular system. Haller describes the condition of the nerves which excite motion in the muscular system, as proceeding from *above*, or from the cerebrum or medulla spinalis *downwards* towards the termination of the nerves. Müller lays down certain laws; 1st. That the motor power acts only in the direction of the primitive nervous fibres, and never backwards: 2d. The mechanical or galvanic irritation of a part of the nervous trunk does not excite the motor power of the whole nerve, but only of the isolated part. 3d. A spinal nerve, which passes into a plexus, and assists with other spinal nerves in the formation of a large nervous trunk, does not impart its motor power to the whole of that trunk; but only to the fibres which it affords in its course from that trunk to its branches. 4th. All nervous fibres act in an isolated manner from the trunk of a nerve, to its ultimate branches. If the spinal marrow be stimulated, all the muscles which receive nerves from *below* the part of the spinal marrow stimulated, are thrown into action.

In the experiments of Redi and Whytt, it was shown that a tortoise, or a frog deprived of its head, would for a considerable time after, move its feet when pricked or otherwise stimulated. Sir G. Blane, obtained the same result with a kitten. When the spinal marrow was cut through between the *lumbar vertebrae*, and the *os sacrum*, the posterior extremities lost their irritability, but the tail, the part below it, retained it. In an acephalous monster, the like *phenomena* were observable. Similar results were obtained by Legallois and Mayo in different experiments. According to Dr. Hall, Sir G. Blane was the only person who perceived that the movements described were different from those produced by sensation and volition. *No one*, he says, has imagined that these motions proceed from the *vis nervosa* of Haller, which he proceeds to demonstrate, but which acts in

directions at variance with his opinions, and with the laws laid down by Professor Müller. This, according to Dr. Hall, was the state of science on this subject, when he began his investigations. It consisted of mere experiments, mere facts untraced to any just principle of action, unapplied to vital phenomena. It was necessary in the first place, to confute the opinion of Haller, and the laws of Müller, relative to the *vis nervosa* or *motoria*. This was done by the following experiment.

“The head of a turtle being removed, to remove sensation, and volition, I denuded and divided the spinal marrow; I then irritated the lower end of the upper portion by a needle, the forceps, and galvanism; I produced motion in the *superior* extremities. The motor power had acted in a retrograde direction.”

In another decapitated turtle, he laid bare the spinal marrow in the dorsal region, and stimulated it as before. This produced motion in *both* the superior and the inferior fins. He next exposed a spinal intercostal nerve in the turtle, and stimulated it. He produced similar movements in both superior and inferior extremities. The motor powers acted in a retrograde or an *incident* course, into the spinal marrow, and both upwards and downwards, into both extremities. He then irritated the cutaneous surface into which those nerves were distributed, with the same result. It was the same when he irritated the extremities of any of the fins. This is identical with the results obtained by Whytt, Legallois, &c., and was referred by them to sensation. The action of the *vis nervosa*, in this last mode, is identical with that of the second series of experiments alluded to. Dr. Hall next proceeds to the application of this principle to the animal economy.

On irritating the border of the glottis, in an animal from which the brain has been removed, the larynx is closed; on irritating the border of the anus, the sphincter is firmly contracted. These actions Dr. Hall has proved by experiments, to depend upon the action of the spinal marrow. The action of the larynx and sphincter, are shown to be dependent upon the *vis nervosa* of Haller, and this is the case with regard to all the orifices, and all the sphincters of the animal frame. All the actions of the system are the result of *excitation* by stimuli applied to nerves, which proceed to the spinal marrow, whence other nerves take their origin, and pursue a *reflex* course to the parts to be moved.

This, then, is the system of which Marshall Hall claims the origin. That of incident nerves, the true spinal marrow, and reflex nerves. It presides over the acts of ingestion and expulsion, over the orifices, and the sphincters. It disproves the idea of segments of the spinal marrow. Five circumstances are required in every instance of an excito-motory act; an excitant; an excitor nerve, continuous to the nervous centre; the integrity of that centre; a motor nerve, continuous to the muscle to be excited into contraction; and that the muscle be endowed with perfect irritability. If any part of the *arc* be interrupted, the phenomenon ceases instantly. There is proved to exist then, according to our author,

1st. A true spinal marrow *physiologically* distinct from the chord of intra-spinal nerves.

2d. A system of excito-motory nerves, physiologically distinct from that of the sentient and voluntary nerves.

3d. A nervous influence, the excito motory power, operating in directions *incident, upwards, downwards, and reflex*, with regard to the true

spinal marrow, the centre of the excito-motory system. The medulla spinalis consists of two portions, so intimately blended, as not to be separable by the anatomist. The *first* of these, is the intra-vertebral chord of sentient and voluntary *nerves*, which proceed *to* and *from* the cerebrum as their centre. The *second*, which may be called the true spinal medulla, is distinguished by being excito-motory, and is the axis of a peculiar system of excitor and motor, or excito-motory nerves, generally, but perhaps not invariably, blended with the former.

The close combination of these two portions of the nervous system in the vertebrata, is the consequence of the necessity of the several pairs of the compound nerves being *intervertebral*, in their exit from the spinal column. This necessity does not exist in the articulata, and the two systems may be therefore anatomically, as well as physiologically distinct. Dr. Hall thinks that he has ascertained, that while the ganglionic nerves in the lobster are incident and excitor, and the columns both direct and retrograde, in their influence, the ganglionic nerves are purely motor, and direct in their mode of action.

Every muscle appears to require *tone*, which is the result of the excito-motory power, conveyed by nerves probably involved in the same neurilemma with voluntary nerves. This power acts during sleep in all the muscles, except the levator palpebræ, and perhaps the four recti of the eye. It is probable that there are no purely excitor nerves in health. The pneumogastric is the least sentient, and most purely excitor of any in the vertebrata. But in certain diseases, the sentient power is annihilated while the excito-motory continues. In diseases or experiments in which the spinal marrow is disorganized or divided, the phenomena which remain are entirely of the excito-motory class. Sentient and voluntary nerves are blended with the excitor and motor nerves, but when the influence of the centre of this system is cut off, their influence is suspended; but the centre of the excito-motory system being in the spinal marrow, the functions of the excito-motory nerves remain.

The anatomy of this system is, therefore, blended with that of the cerebral system, but its physiology, pathology, and therapeutics are perfectly distinct. The *vis nervosa*, and the power which produces those actions designated as instinctive, automatic, sympathetic, &c., are identical. The incident, retrograde, and reflected courses, and combined forms in which it operates, are at variance with the laws of Müller. The medulla spinalis, or the medulla oblongata, is the special *combiner* and *disposer* of the excito-motory functions, in producing the complex effects and operations observed in deglutition, respiration, &c.

The novelty of Marshall Hall's views consists, therefore, in attributing to that power called by Haller, the *vis nervosa*, those functions that have been supposed by other physiologists, and even by Charles Bell, to be voluntary, and dependent upon the cerebrum. A muscle is stimulated, the action is conveyed by an excitor nerve, to that particular part or tract of the spinal marrow or medulla oblongata, which is the centre of this system, and which cannot be anatomically traced, but is only known by its functions. It is then conveyed by a motor nerve to the muscle. This action is represented by two lines, one passing from the muscle to the medulla or centre; and the other passing from this centre to the muscle; the first conveying the excitor, the second the motor power.

This then is in brief, the essence of Marshall Hall's discovery. If these

views are proved to be incorrect, the whole fabric he has reared upon it must fall; but if his foundation be substantial, there may be faults in the superstructure, there may be errors in carrying out his system, to which every new system must be liable; but these will not injure the foundation or detract from the merits of the system itself. The system is simple, and rests upon experiments, which may easily be repeated. But though Dr. Hall's views were first published in 1832, and 1833, so far from being refuted, they have gained ground, despite of all opposition; and the principal dispute is now, not with regard to their truth, but with regard to their originality.

In regard to the second question we propose to consider the value of these views; it is not easy to pronounce in the present state of the subject, as to their practical bearing. The functions of the cerebrum, and of the spinal marrow, are of the highest importance, and whatever leads us to a more accurate knowledge, and discrimination of the functions of each of these organs, must be of the utmost value, not only in a speculative point of view, but from the light it must throw upon the pathology of their functions. The cerebrum and the spinal marrow, play the part of magicians in pathology. Their action is unseen, and much is doubtless attributed to them by some, in which they take no part; while, on the other hand, their power in the production of disease, is too little estimated by others. Whatever leads, therefore, to correct views of the pathology of the cerebral, spinal, and nervous systems, must throw immense light upon therapeutics in general. Perhaps, however, there can be no better test afforded of the value of these views, than the contest which has arisen with regard to their originality; and this brings us to the third question we proposed to consider, the originality of the system.

One of those who have contested the honour of the discovery most warmly, is Mr. Mayo. But while we give him all credit as an industrious and ingenious inquirer in physiology, it is perfectly evident that he did not perceive the results, which might be deduced from the experiments he published; and that but for Marshall Hall, these deductions would never have been made. But the claims of another writer, Prochaska, which have been set forward, demand more serious investigation.

We may premise, however, in the first place, that Prochaska's works were published in 1779 and 1800, and that from that time to this, no one has deduced from them a system similar to that of Marshall Hall, notwithstanding all the attention that has been bestowed upon the nervous system. His works are quoted freely by Charles Bell, yet this great physiologist and discoverer did not perceive the important deductions which he should have made, had the anticipation of Marshall Hall's views been so complete as has been affirmed. Müller also, though he has contributed much towards the foundation of the system, either saw no such system in Prochaska's writings, or gave it no credit; the laws of Müller, we have before alluded to, being in complete opposition to the existence of the reflex function. We must therefore allow to Dr. Hall, the credit of bringing the system into notice, and establishing and illustrating it, whether he derived it from Prochaska, or from the result of his own labours and reflections. It is, after all, of little consequence to us, whether the system was generated in his own mind, or derived from the works of another. In Prochaska's works, if it existed, it was a dead letter, unknown, and undeveloped. It is evident, that we owe to our author its development, and

its promulgation. He was the only physiologist who perceived the value of these views, and made them into a system. The honour due to him, therefore, would be nearly as great, if he had published his system as derived from Prochaska, as if he claimed the original discovery of it. But, as he did not do so, his reputation for disingenuousness must suffer, if the system was derived from Prochaska; and if the views of this writer were known to him. On the other hand, he is accused of culpable ignorance, and negligence, if he had not consulted this author. One of Dr. Hall's most severe critics allows him the merit of the "harmonious combination of these doctrines into a uniform system, and the application of it to the explanation of many phenomena, which were not formerly regarded as explicable on such principles;" and the same critic observes, that Prochaska wanted only the knowledge of the system, subsequently developed by Sir Charles Bell, to make his discovery complete. Now as this knowledge was pretty essential to the formation of the system under consideration, nearly all is allowed to Marshall Hall, which he is disposed to claim. But let us proceed to the consideration of the part of Prochaska's writings in question.

The author observes that external impressions which are made upon the sensorial nerves are very rapidly propagated through their whole length to their origin; where, when they have arrived, they are reflected according to a certain law, and pass into certain responding motor nerves, through which they are again propagated to muscles, and excite certain and determinate motions. This place, in which as a centre, the nerves of sense and of motion meet and communicate, and in which the impressions of the sensorial nerves are reflected upon the motor nerves, is called the sensorium commune. The seat of the sensorium he fixes in the spinal marrow, or in the spinal marrow and *part* of the cerebrum and cerebellum, for he observes that when a frog is decapitated it still crawls and leaps, and on the application of stimuli a part is retracted; which could not be without the consent of the sensorial and motor nerves, of which consent the seat must be in the spinal marrow, a part of the sensorium commune remaining. The reflection of sensorial into motory impressions does not obey mere physical laws but natural or vital laws, by which certain external noxious impressions are followed by certain motory impressions tending to remove the source of injury; and the reverse with regard to beneficial impression. Irritation of the internal membrane of the nostrils excites sneezing, because that irritation made upon the olfactory nerves, is carried to the sensorium commune, and is there reflected, according to a certain law, upon motor nerves going to the muscles appropriated to respiration. Any irritation given to the larynx, in like manner causes it to close. The approximation of the finger to the eye causes the closure of the palpebræ, &c. These actions take place whether the mind is or is not conscious of them. The principal function of the sensorium commune consists in the reflection of sensorial into motory impressions. The sensorium commune acts without consciousness in producing the convulsive motions of epileptic patients and in those which are observed during sound sleep, besides motion of the heart and respiration. The motions which remain in the body of a decapitated man are of this nature. They arise from physical laws proper to the sensorium commune, and are spontaneous and automatic. Those actions which take place in the animal body with consciousness are such that the soul has power over the will, or such as the soul can coerce

and impede. The former are ruled by the sensorium commune, and are automatic; while the actions which the soul directs are called animal.

This does indeed bear a strong resemblance to Marshall Hall's theory. Here we have sensorial nerves in place of excitor nerves, a common centre, the *sensorium commune*, which is seated partially in the spinal marrow and acts when cut off from the cerebrum, and which is entirely distinct from the soul. We have also motor nerves which are identical with those of our author. The parts which afford the principal examples of reflex action are also instanced by Prochaska, the lining membrane of the nostrils, the eyelids, and the larynx, &c. Respiration also is considered by him as well as by Dr. Hall, as partly a function of these nerves and their centre. We should, therefore, at first sight, be disposed to consider the views of our author as at least suggested by the passages in Prochaska, were it not for his positive denial, that he ever saw the work of this writer until three years after his first paper was published.

But we may ask, whether any one upon reading the passages alluded to, and of which we have given the substance, would have considered them as involving any more than a vague theory such as thousands which have had their birth and sunk speedily into oblivion? A person who has a general knowledge of anatomy and physiology might ask "why do I sneeze when snuff is presented to my nostrils? It is not a voluntary act, nor can I perform the action if I attempt it by my will; nor is it the effect of the stimulus upon the part to which the snuff is applied merely, for without the agency of the nerves there could be no such combined action as produces sneezing. The sensation produced by the stimulus must therefore be conveyed by nerves to some common point, and from thence the motive impulse returned by other nerves to the seat of action." This we believe to be pretty near the common theory. A certain stimulus applied to a muscle acts through the medium of the nerves upon the brain, and the brain either with or without the cognizance of the mind acts upon the muscles through the medium of the nerves. The mind in this case has been supposed to be the agent but acting so instantaneously as to produce no impression on the memory, in the same manner as the hand of an experienced musician passes over the keys of his instrument and performs with accuracy, while his thoughts are entirely engaged upon a different subject, the mind undoubtedly acting in this case, but retaining no impression of its action.

Here then is the general idea of a reflex action. The experiments upon decapitated animals, however, show that the brain has no connection with this function, and hence the consideration of these experiments might have naturally led both Prochaska and Marshall Hall separately to place their sensorium commune or centre of reflex action in the spinal marrow.

We do not wish, however, to constitute ourselves apologists or champions of Dr. H. We have presented, as we believe, a fair account of the views of Prochaska condensed from the extracts given in the original, in the British and Foreign Quarterly Review, translated in the London Medical Gazette, and in the work we are reviewing. We leave it for our readers to form their own opinions upon the subject. We must say, however, in conclusion, that even if Dr. Hall's denial of his knowledge of Prochaska's theory be disputed, he must, at least, be allowed the merit which the reviewer above mentioned concedes to him. The developement and the formation of a complete system, and its application to the explanation of facts must, at least, be allowed to him. The honour of a discoverer

belongs more to him who traces deductions from experiments, who brings a theory to the test of facts, and carries it out into its applications; who combines the whole into a system and renders it intelligible and demonstrable—than to him who starts a hypothesis, but leaves it unconfirmed by experiment or untraced to its practical results. He in fact deserves more whose labour causes a truth to be received, than he whose ingenuity discovered it.

We will now go into the further consideration of our author's views. He undertakes to trace the action of the excito-motory power, *vis nervosa*, *vis motoria*, or excitabilité in; 1st. A special anatomy. 2d. A special physiology. 3d. A special pathology; and 4th. A special therapeutics.

Previously, however, to entering upon these divisions, he finds it necessary to consider the *ganglionic system*. This he divides into two parts; the first is that situated amidst the organs of the face and head, and chiefly connected with the trifacial nerve. It comprehends four ganglions; the ophthalmic or ciliary; the rhinic or nasal; the otic or auricular; and the glottic or lingual. There are also the ganglia formed upon the major portion of the trifacial, and upon the posterior roots of the spinal nerves. The external division of the ganglionic system consists, therefore, of the fifth and the posterior spinal. The internal division comprises the grand sympathetic and the pneumogastric. These ganglia, according to Dr. Hall, perform the office of nutrition.

"1. There is an internal nerve for formation, nutrition, secretion, &c. 2. This nerve is ganglionic. 3. There are external organs and structures requiring nutrition, &c. 4. There are also external ganglionic nerves. The inference is plain that these constitute the external ganglionic sub-system."

The semilunar and external spinal ganglia differ in appearance from the ganglia of the sympathetic. This difference consists in their being alone *plexic*. The internal ganglionic nerve is purely nutrient; its ganglia are simple. The external involve sentient and probably excitory nerves with the nutrient; they, therefore, combine the appearances of the plexus and the ganglion. The trifacial and spinal nerves, besides their other functions, are shown to possess a nutrient and secretory power; 1st. Because the distribution of this nerve to the lachrymal, parotid, and submaxillary gland can only be for secretion. 2d. The experiments of M. Magendie, in which, division of the trifacial within the skull led to the destruction of the eye, can only be explained in this manner. 3d. The cases of destruction or compression of the trifacial within the cranium from disease of the human subject, are of the same character. If the sensation of the face be lost by paralysis arising from disease of the *brain*, the eye is safe, but if the same event occur from compression or destruction of the *fifth within* the cranium by disease, or in an experiment, the eye ceases to be nourished and becomes destroyed. In the former case the nerve of sensation merely has suffered; in the latter the nerve of nutrition as well as sensation. 4. A branch of the trifacial nerve discovered by M. Arnold, and termed by him the recurrent of the fifth, is so situated that its only office must be that of nutrition. 5. The whole nervous system seems to have a certain influence upon the action of the heart. To crush the brain or spinal marrow, enfeebles or arrests the circulation. He has discovered that the same effect is produced by crushing the limbs; doubtless through the medium of the ganglionic system.

Physiology of the Nervous System. A horse was struck with a pole-

axe, over the anterior lobes of the brain. He fell instantly, was convulsed, and then remained motionless. Shortly after he began to breathe, and continued to breathe freely by the diaphragm. When lacerated, or pricked by a sharp, or pointed instrument, on any part of the face or surface, it was totally motionless, manifesting no evidence of sensation or volition. When, on the other hand, the eye-lash was touched with a straw, the eye-lid was forcibly closed by the action of the *orbicularis*. When the cornea was touched, the eye-ball revolved outward by the action of the *abducens*. When the verge of the anus was touched, the sphincter contracted forcibly, the tail was raised, the vulva was drawn towards the anus. Upon destroying the medulla oblongata, there were violent convulsions, respiration ceased, and the eye-lid and eye-ball remained motionless on the application of stimuli. Dr. Hall divided the spinal marrow of a frog below the occiput. All was still. On pinching a toe, both posterior extremities moved. All was still again: there was no sign of pain from the wound in the neck. The *power* to move remained, the *will* was extinct. On destroying the whole spinal marrow, the excito-motory phenomena ceased. To prove that the excited motions are not the result of irritability, he now applied a slight galvanic shock, and the motions were instantaneously stimulated into forcible action. In a patient in deep coma, he pierced the skin on the cheek, the hand, the thigh, &c., with a pin. There was no sign of sensation. He then touched the eye-lash, and *internal* nostril, with a feather. This excited action of the *orbicularis*, and *alæ nasi*.

The functions of the cerebral system are sensation, perception, judgment, volition, and voluntary motion. The true spinal system is independent of the cerebrum, and subsists when the cerebral lobes are removed. The cerebral system is the seat of the intellect; the true spinal is the organ of the passions. The motions of the latter system are always excited, even the motions of respiration, as far as they belong to this system, are excited. The true spinal marrow is the source of *tone* in the whole system. It presides over the expression, the passions, and emotions, over all those acts designated as sympathetic, over the orifices and the sphincters, and in fact over the whole muscular frame. The cerebral system sleeps, but the true spinal system never sleeps. It is susceptible of modification by volition, and hence, some of its functions have been denominated mixed.

In his third lecture, Dr. Hall proceeds to the consideration of the principal functions of this system separately. 1st. The *excited closure of the eye-lids*, which is dependent upon the excito-motory action in the *orbicularis*. The levator palpebræ, and perhaps the four recti, are purely cerebral, and voluntary; and while awake the first named muscle is more powerful than the *orbicularis*. In sleep the *orbicularis* prevails. 2d. *Deglutition*. If an incision be made in the side of the neck in a living animal, and an instrument be passed in, it is immediately grasped forcibly; and this occurs in a young animal, even after decapitation. In the last case, the action ceases, either upon destroying the medulla, or dividing the nerves which connect the system. The *cardia* opens to receive food from the œsophagus, and closes to retain it. It is paralyzed by dividing the pneumogastric nerve, which is pre-eminently the internal excito-motory nerve. Deglutition consists, therefore, first, of an excited closure of the larynx; secondly, of an excited action of the pharynx; thirdly, of an excited opening of the

cardia. The active dilatation of the sphincters is similar to the action of the sphincter of the rectum. 3d. The *excited closure of the larynx*. This does not take place, when the larynx is separated from its connections with the medulla oblongata, or when the medulla is destroyed. It is, therefore, plainly dependent upon excitor nerves, and the medulla, produced by a reflex excito-motory act of the superior laryngeal, and the medulla oblongata. 4th. *Respiration* is a mixed function, partly dependant upon cerebral agency, or volition. It may be continued for a period, though imperfectly, when the cerebrum is cut off, or when the pneumogastric nerves are cut off, but not when both cerebrum and pneumogastric nerves are removed. The medulla oblongata is not the source, but the *channel* of the respiratory motions, the pneumogastric nerves being, the *primum mobile*, the excitor of these motions, and the medulla the organ which combines the different motions which constitute respiration. The trifacial and spinal nerves are also exciters of respiration, while the various nerves comprised in the respiratory system of Sir Charles Bell, are the true motor nerves of respiration. 5th. The *Closure of the Sphincter Ani*, 6. the action of the expulsors, 7. the act of generation, are all dependent upon the excito-motory system, as is proved by various experiments. 8th. The *tone* of the muscular fibre throughout the animal frame is shown to be dependent upon this system. Two rabbits were taken, one of which was decapitated, and the other deprived both of head and spinal marrow. The limbs of the former retained a certain degree of firmness and elasticity; those of the second were perfectly lax. In a turtle, a similar result took place. 9th. The *seat of the passions* is in the medulla oblongata. In an idiot in whom the cerebral functions are undeveloped, the passions and appetites often manifest themselves to a violent degree. The arm which is insensible to volition in hemiplegia, is strongly agitated by surprise, and other emotions. The seat of these emotions is therefore placed lower down than that of volition, and the passions are manifested in the most distinct manner. But in paraplegia the influence of the passions as well as volition is cut off. The seat of this disease is therefore lower down than that of the emotions.

With regard to the anatomy of the nervous system, Dr. Hall gives a table of the cerebral system, representing the cerebrum, and cerebellum, as the centre of the system, and placing the sentient nerves on the left hand, and the voluntary on the right. Also, a table of the true spinal or excito-motory system, with the medulla oblongata, and spinal marrow, as the centre, with the incident, excitor nervous branches on the left, taking their origin from the eye-lashes, pharynx, anus, cervix vesicæ, &c., and the reflex, motor branches on the right. The pneumogastric is almost throughout both excitor, and motor. The excitor nerves may be viewed as *guards* of the orifices and the exits of the animal frame. The respiratory system consists of the *excitors*, which are the trifacial, pneumogastric, and the spinal: the medulla oblongata as the *centre*, and the *motors*, which are the intercostal, diaphragmatic, lower spinal nerves, &c.

We now come to the *pathology* of the nervous system, according to Marshall Hall; which is the fourth point of view in which we proposed to consider his system.

“In order to conceive a clear idea of the pathology, we have only to imagine the physiological phenomena already noticed, assuming a pathological character. Now the force of these phenomena may be augmented, diminished, or annihilated.”

The whole order of spasmodic and convulsive diseases belong to the excito-motory division of the system. All these diseases have their source in one of three parts of this division. The first series have their origin in the spinal marrow itself, the axis or centre; these Dr. Hall terms *centric*. The second, arising in the excitor nerves, are *eccentric*. The third series arise in the course of the motor nerves.

In all or most spasmodic diseases, the parts most concerned are the orifices, and the sphincters. Thus the larynx is closed in convulsions of children, puerperal convulsions, epilepsy, &c. It is spasmodically affected in tetanus, and hydrophobia. The respiratory muscles are affected in all; the sphincters, and even the ejaculators in epilepsy. The latter disease affects every part of the excito-motory system. The condition of the larynx, and respiratory motions, affords an important diagnosis between epilepsy and hysteria. In the former, the larynx is usually closed with forcible expiratory efforts; in the latter, with heaving, sighing, and breathing. Tetanus is a disease of the excito-motory system. When arising from disease within the spine, it ought to be termed *centric* tetanus. When the cause is seated in an excitor nerve, as when such a nerve is included in a ligature, or lacerated in a wound, it should be termed *eccentric*.

The act of vomiting combines the excitor and motor nerves of respiration, into one system.

Disease of the meninges, and of the brain, induce spasmodic actions probably upon the principles of irritation, and counter pressure, the first, through the medium of the nerves, distributed to the membranes, as the recurrent of the 5th of Arnold. Convulsion from excessive hæmorrhage is *spinal*. Those cases in which *one* limb of an infant cease to grow, are probably cases in which the disease is seated in the posterior spinal nerves leading to the part, probably at or near their origin.

Therapeutics. Excitement of the cerebral system may be diminished, by a due attention to exclude the patient from light, noise, and every kind of excitement. The excito-motory system is excited by strychnine, and calmed, or diminished in its powers, by hydrocyanic acid. The carbonate of iron, liquor arsenici, galvanism, dashing cold water on the surface, the removal of irritation, and the use of counter-irritation, are the principal therapeutic processes.

The irritability of the muscles of an inactive limb is greater than that of an active limb. This is evinced by the action of galvanism, in which a slight shock produces an effect upon the paralytic limb without any upon the sound limb.

Contraction of the limbs in atrophy of the brain, and old hemiplegia, is dependent upon the constant influence of the true spinal marrow, or the principle of tone, on muscles whose irritability is great in consequence of the want of voluntary actions. An amyelous foetus cannot survive birth. An anencephalous foetus may live for several hours. In the latter case, all the phenomena are excito-motory.

Congenital diseases of the nervous system are divided into those which take place *in utero*, and those which are induced *inter partum*. The latter are apoplexy and asphyxia. These are with difficulty distinguished. Efforts to excite respiration, must be applied to the excitors of respiration, the fifth, the pneumogastric, and the spinal nerves. The *fifth* must be excited by *forcibly* blowing, or dashing cold water on the face, or by stimulating the nostril with ammonia, snuff, &c. The *spinal* nerves must

be excited, by forcibly dashing cold water on the thorax and thighs, by tickling or stimulating the sides, the soles of the feet and the verge of the anus. If this fails, the practitioner must try to excite respiration through the pneumogastric, by distending the lungs artificially, from his own lungs. If these fail, galvanism, or electric shocks, should be passed from the side of the neck to the pit of the stomach, or in the course of any of the *motor* respiratory nerves. The apparatus for this purpose, should be had ready for use as soon as possible, but the lapse of an hour or more should not prevent its being used. Care should be taken to prevent a return of the asphyxia.

Dr. Hall claims the priority, in having distinguished the "hydrocephaloid" disease, from hydrocephalus, which has been described also by Dr. Abercrombie, in his *Researches on Diseases of the Brain, &c.*, and by Dr. Gooch, under the head of "Symptoms in children erroneously ascribed to disease of the Brain." This disease depends principally upon exhaustion, and as it has been frequently confounded with inflammation of the brain, or incipient hydrocephalus, the remedies employed to relieve it have contributed to its increase. Its origin in early infancy is from diarrhoea or catharsis; at a later period of infancy from loss of blood or from purging. The effects of exhaustion in children, Dr. Hall observes, open a new field of medical investigation. This disease is divided into two stages; the first, that of irritability, the second, that of torpor. In the first, there is feverishness, and undue sensitiveness; the patient starting on being touched; sighing, and moaning during sleep, and screaming; the bowels are loose and flatulent, and the evacuations mucous and disordered. If cordials are withheld, the second stage supervenes, more marked by symptoms of exhaustion. The countenance becomes pale; cheeks cold; eyes half closed, unfixed, pupils unmoved on approach of light; the breathing, at first quick, and then irregular and affected by sighs; the voice becomes husky, sometimes with cough, &c. The warm bath is a remedy of great efficacy for the state of irritability. For the coma, a small blister, or sinapism should be applied to the nape of the neck. The principal treatment of the disease consists, however, in the administration of cordials. Dr. H. gives several interesting cases exemplifying the character and symptoms of this disease.

The seventh lecture is devoted principally to the consideration of the croup-like disease. This our author describes as arising from irritation of the trifacial, pneumogastric, and spinal nerves during dentition, or from indigestion or constipation. The effect of this irritation is conducted to the spinal marrow, and thence, reflected upon the superior laryngeals, diaphragmatic, intercostals, and the abdominal nerves. All spasmodic diseases might be represented in a similar manner. The whole class of convulsive diseases consist of affections of the true spinal system; but do not all originate there. Some originate in the cerebrum, from *counter pressure* in diseases; from contre-coup in injuries of the encephalon; from *irritation* in diseases of the meninges, or at the base of the brain; and from *exhaustion*. Of convulsions arising in the true spinal system, some are *centric*, others *eccentric*, according as they originate in the spinal marrow itself, or in the nerves. Their principal causes are *dental* irritation, *gastric* irritation, or *intestinal* irritation. Dr. Hall declares, that he has never known the measures founded upon his view of the causes to fail, when early and effectually enforced. There are certain other causes

which act upon the nervous centres. These are passion, vexation, and certain odours. The state of *sleep predisposes* to attacks of convulsions.

The croup-like disease has been described by Dr. Underwood, and Dr. J. Clarke. It consists in convulsion attended with a peculiar sound of the voice similar to croup, and frequently coming on during sleep, or on any exertion of the body or transient surprise. Dr. Hall affirms, that if, instead of the warm bath, the *gum lancet* and warm water *enemata* were *instantly* administered, many patients would be saved. Dr. H. concludes this subject with an account of several cases, and with a *sketch* of the disease. It may seem rather singular, to attempt to represent the action of morbid agents pictorially; but it is certainly a very clear, and forcible method. The croup-like disease is represented by certain lines indicating the spinal marrow, to which on the left, the trifacial, pneumogastric, and a spinal nerve, pass *from* the face, stomach, and rectum; and on the right, the motor nerves pass *from* the spinal marrow, to the larynx, arms, diaphragm, and lower extremities, the course being represented by arrows.

As the cerebral system becomes developed, in the progress towards manhood the true spinal becomes obscured. The true spinal functions are entirely of a *vital* kind.

Dr. Hall divides the diseases of the nervous system, into the cerebral, the true spinal, and the ganglionic.

In encephalitis, the cerebral system is first affected; next, the true spinal, and thirdly, the ganglionic. The principal remedy for this disease, is full blood-letting. Our author insists strongly, that this should be practised in the erect position, and carried to the first symptoms of fainting. By this precaution, the danger is avoided, of mistaking diseases of an opposite character for encephalitis. The same remark applies to the diseases next considered, apoplexy, and paralysis, or as Dr. Hall terms them, congestion, without rupture, and hæmorrhage, or rupture. In congestion, there is extreme tolerance of loss of blood. In actual rupture, the system is extremely and dangerously affected by this loss. Dr. Hall inquires, whether it may not be better in case an attack of apoplexy is recovered from, to address the remedies for the remaining paralysis, rather to the cerebral system than to the spine? Liniments, and electricity may be tried; but especially voluntary movements of the limb. Cupping so as to induce irritation, rather than to abstract blood, setons, issues, near the part affected, that is, upon the hemisphere opposite the paralysed side, are our principal remedies, but especially the first of these. In paralysis, the spinal system acquires the superiority over the cerebral; the powers which have become obscured, but not impaired, by the development of the cerebral system, are left uncontrolled, producing rigidity of the muscles from too much *tone*, and incapacity for motion. The proper and natural cure for this state of things is, therefore, cerebral exertion, and *voluntary* motion, and not strychnine, or galvanism.

Tubercles never occur beyond the age of fifteen in any organ of the body without being found in the lungs. In a doubtful case, therefore, where their existence is suspected in the brain, the diagnosis may be aided by examination of the lungs. Hereditary predisposition also will serve as an additional guide.

Mania is frequently found attended by deposits of serum and lymph between the arachnoid and the pia mater, and sometimes with effusion into the ventricles; sometimes injection of the cortical substance. Dr. Hall seems to

be of opinion that these deposits are rather the product than the cause of mania. "If encephalitis is the frequent effect of mental harass and effort, why may not these appearances be the effect of the maniacal state?" "If mania be the *cause* of the morbid appearances, our hopes are excited; if it be the effect, our fears are confirmed." The *moral* treatment is so important as it is known to be, because it diminishes the violence of the maniacal condition, and, thence its tendency to produce morbid changes of structure. For the same reason, it is important to procure quiet sleep.

There are a series of morbid affections, which result from peculiar affections of the general system, which it is important to distinguish. The first of these is the intestinal irritation from indigestible food, scybala, &c., excited into activity by a fall or some shock of the system or other accident.

"The symptoms are rigor, frequently severe heat of the surface, and violent pain of the head and intolerance of light and sound; the symptoms, in a word, of the most acute encephalitis."

"The breath is tainted, the tongue loaded and swollen, the secretions morbid; but it would be difficult to establish a distinct and confident diagnosis without the criterion afforded by the effect of blood-letting in the erect posture."

In a doubtful case, an enema of warm water should be very slowly administered, and its effects examined. If there are scybala, if the symptoms are subdued, and, especially, if there be faintishness, the case is undoubtedly not cerebral inflammation, but intestinal irritation. If the case continue doubtful, venesection should be resorted to, with the precautions before mentioned, and the blood allowed to flow until the lips become pallid; if the case be encephalitis, four times the quantity of blood may be taken, without producing syncope, that could be taken, without that effect, in intestinal irritation.

Dr. Hall next notices exhaustion from loss of blood, which has sometimes been mistaken for cerebral inflammation; and the proper treatment of which consists in the use of stimulants. The influence upon the encephalon of that state of bloodlessness which occurs in chlorosis is next noticed. Within the last four years, Dr. Hall has seen four fatal cases of chlorosis. In one of these cases, where there was a post mortem examination, there was œdema, effusion under the arachnoid, and into the pleura, the pulmonary cellular membrane, &c., and a general state of bloodlessness. *Shock*, mental and physical, the effects of alcohol, dropsies, and ischuria are the remaining subjects discussed under the head of cerebral diseases arising from various affections of the system.

The diseases of the spinal marrow are divided by Dr. Hall into central, or diseases of the true spinal marrow itself; the centripetal, or diseases excited through the excitor nerves; and the centrifugal, or diseases of the motor nerves.

Inflammation within the spine like encephalitis is distinguished into spinal meningitis; inflammation within the membranes; spinal myelitis of the cerebral tracts; of the true medulla; and of its principal divisions.

Blows, falls, or other injuries, and exposure to damp or cold, are the principal causes of inflammation within the spine. It rarely exists without meningitis within the cranium. The symptoms of meningitis are more those of *irritation* of the spinal marrow or spasm; those of myelitis more those of *destruction* of the organ or paralysis. Among the first symptoms

of the former disease is local *pain* augmented by motion and by percussion, but rarely by pressure. There is trismus, tor icollis, partial or complete opisthotonos, sometimes convulsions. Respiration is sometimes difficult, and sometimes there is retention of urine and constipation.

In myelitis, there is paralysis of sensation and voluntary motion, a sense of numbness, impaired sensibility, and a sense of feebleness, which are first observed singly or combined, in one or both of the inferior, or superior extremities. In some cases, probably complicated with meningitis, there is augmented sensibility. In other cases there are spasmodic or convulsive affections.

Centripetal epilepsy, which takes its origin in the extremities, or as Dr. Hall calls them, the *origins* of the excitor nerves, is considered as curable, however difficult of cure. The causes of this are irritation of the stomach, the intestines, or the uterus. The immediate accession of a paroxysm may often be prevented by dashing cold water in the face, or by exciting the nostrils with snuff, &c.

In tetanus, Dr. Hall proposes the division of the injured nerve, or amputation. In hydrophobia he would combine the administration of hydrocyanic acid with tracheotomy. Strychnine, he says, might cause tetanus or hydrophobia but can never cure it. Hysteria is distinguished from epilepsy by the closure of the larynx in the latter, which never takes place in the former. Hysteria seems to single out and affect every function which belongs to the true spinal system. Chorea is centripetal in its origin, but becomes centric and cerebral in its course before its fatal issue.

In the twelfth and last lecture the subject of spasmodic asthma is first considered, and next the act of vomiting, which is a reflex, spinal act. Dr. H. considers abortion an excited act; which is sometimes produced through the spinal nerves of the rectum, by the action of morbid and exciting excretory matter, and sometimes by a dead foetus, which acts as a foreign substance.

The centrifugal diseases, which are diseases of the reflex motor nerves, form the remaining subdivision. These are spasmodic strabismus, spasmodic tic, and spasmodic torticollis. These subjects complete the course of lectures under review.

It is evident that a wide field of discovery and research remains open. It is to be regretted that our author and other physiologists cannot unite in pursuing harmoniously these objects of inquiry, without jealousy or ill feeling. We have taken no notice of the frequent ebullitions of anger, with which the lectures are seasoned; but we may say, in conclusion, that, however provoked, they appear to us undignified. It would be much better for Dr. Hall to trust to the merits of the system he has established, for the maintenance of his reputation, than to the angry vindication of it from the attacks of his opponents.

E. W.

ARTICLE XII. *Elements of the Practice of Physic, presenting a view of the present state of Special Pathology, and Therapeutics.* By DAVID CRAIGIE, M. D. F. R. S. E. Vol. I. 8vo. Edinburgh, 1836. pp. 952.

THE most valuable, and enduring medical books are undoubtedly those written by men of strong natural powers of observation, who write from the fulness of their own minds, and describe in plain forcible terms, with brevity, and conciseness, what they have seen, and experienced. Such are the writings of Hippocrates, of Sydenham, and of John Hunter; to which may be added, the more modern works of Sir Astley Cooper, Arbernethy, &c. The few books we have of this kind may be considered as the diamonds of medical literature. These works are durable, because they delineate facts; they describe the phenomena of nature, and nature is always the same. The empirics are, therefore, better writers than the rationalists; at least, their productions have a more permanent value.

But such men being seldom voluminous writers, and having rarely leisure, or inclination to commit to paper the results of their labours and observations, much of the most valuable part of medical experience perishes with those who possess it. The medical community is, therefore, the more indebted to those who will undertake the task of compiling and collecting from the depths of the wide sea of medical literature, whatever is truly valuable.

For having undertaken, and still more for the manner in which he has accomplished, this labour Dr. Craigie is entitled to our gratitude. His work is the most extensive general treatise, that has appeared since that of Dr. Good. The first volume contains 952 closely printed pages, and is confined entirely to the subjects of fever, and inflammation.

The volume bears the appearance of very great labour, and research. The author professes it to be his object, not to give his own opinions upon the various diseases treated upon; but to bring into "one uniform, harmonious, and comprehensive system, the whole of the theoretical principles, and the practical applications, of which the art of preventing, and of curing diseases, now consists." He aims at collecting, and arranging, in a work of moderate compass, the most material points in special pathology, and therapeutics, with the various facts on which they rest; in order to facilitate the labour of the student, and the younger members of the profession. It has been his design also, to reconcile the differences of opinion among different observers—to examine, compare, and analyse, the facts, and classes of facts, recorded by them, and endeavour to reconcile their discrepancies by the result of the labours of others, or by his own experience, and to deduce correct and legitimate principles from the whole.

In his Introduction, the author defines disease, as consisting in impaired action, or disordered function of the body. Functional derangement very often depends upon change of structure. Each function consists of distinct actions; each action, is performed by one or more organs constructed for the purpose, and each organ consists of certain elementary tissues, each of which possesses a definite arrangement of its minute particles, or constituent atoms, and is endowed with certain physical, and vital, or physiological properties. Every derangement of function, depends on the derangement of some of its constituent actions. It is doubtful whether any action can be deranged without some change in the properties of the

elementary tissue; and how far these properties can be changed without a change in the elementary atoms, which constitute the intimate structure of the organs.

Every disease is probably, at its commencement, a dynamic affection only, and consists entirely of some preternatural change in the properties of some of the organic systems or tissues. In all cases, dynamic changes may be said to terminate in organic changes. Organical changes may be traced to functional lesions. Conversely, an organic change originated by a functional lesion, re-acts upon the latter, and increases it. Every disease presents two orders of objects; one of deranged function, the other of deranged structure. The latter are called diseases, the former symptoms. To form from external signs, &c., an accurate knowledge of the nature, and extent of the morbid action, is the object of pathology. Our author points out the extensive meaning of this word; that it is not confined to anatomical appearances, though it has come to be used more particularly with regard to them. But chemical, and physiological pathology, are full as important as anatomical. Anatomical examinations can show only the effects of morbid actions, not the actions themselves. By connecting, however, these effects with the symptoms observed in the living body, and with the morbid changes observed in the actions, and functions, and occasionally in the secretions, we are enabled to arrive at the most precise knowledge of which we are capable with regard to disease. In some diseases, no lesions are discoverable after death, and in these, the greatest obscurity prevails.

Morbid processes differ; 1st. In the nature of the process itself. 2dly. In the acute, subacute, or chronic nature of the morbid process. 3dly. In the simplicity or complication of the morbid action.

In regard to the classification of diseases, none has yet been made which is not liable to serious objections; none which meets with universal-acceptation. It would seem to be much the best plan, therefore, either to abandon classifications altogether, or to adopt one that has been generally received, and endeavour to remove what there is in it erroneous, rather than to adopt a new system. The mental habits of men are so various, that no classification is likely to be fitted for all. Every active thinker, or inquirer, will be likely to form a classification for himself. It would, however, be a desideratum, to have an uniform order for the arrangement of diseases; and were it generally adopted, it would matter little upon what principles it was founded. There is little danger in these days, that propinquity in arrangement will lead to the uniformity of treatment of different diseases.

Upon the ground alluded to, however, that it is most natural for every man to adopt his own classification, we cannot deny to a lecturer, the privilege of treating diseases in the order most agreeable to himself; and this is the manner in which our author was led to the arrangement he has adopted. It must be allowed also, that in these days, when so much attention is universally paid to the subject of pathology, an arrangement founded upon the changes of function and structure produced by disease, is the most natural.

Our author commences with fever. This term, he says, is employed to denote that condition of the human body, in which there is an obvious and unusual increase of heat, and unnatural quickness of the pulse, with disorder more or less general of several functions. It is primary or secondary,

idiopathic or symptomatic, simple or complicated. Dr. C. alludes to the opinion held by Autenreith, Clutterbuck, Mills, and Broussais, that fever never occurs without some local affection. This, he says, is not inconsistent with the existence of idiopathic fever. In most cases, whatever be the form or type the fever takes, an affection of some organ or tissues actually occurs, to a greater or less extent. The manner in which the local affection takes place, is not favourable to the opinion that it is the material cause or agent; since it generally follows the fever, and ceases when it subsides. In other respects, Dr. C. considers this an hypothesis which cannot claim any other denomination, than a mere admission of the difficulty of accounting for the morbid process in which fever consists. The opinions of our author are in fact, as we shall see hereafter, that all fever is in its origin idiopathic, and that the lesions found after death are the consequences, and not the causes of febrile action.

He commences with intermittent fever. In regard to the etiology of this affection, after a full exposition and examination of the causes of the bad effects of marsh miasmata, as given by the best authorities upon the subject, he draws the following conclusions.

In the first place, agues are remarked to be the diseases of wet marshy districts, and to prevail most abundantly in countries which are low, swampy, and humid. Secondly, simple moisture is not adequate of itself to the production of ague. The moisture of the sea, and of large lakes, for instance, do not produce ague. Thirdly, it does not occur in cold climates or seasons, and invariably requires a certain degree of heat. Fourthly, ague appears in the temperate zones at least, to require a certain degree of heat and drought, in the transition from humidity. Fifthly, the existence of a marsh or swamp is not adequate or necessary for the production of ague. Sixthly, agues prevail where no marsh is visible. In most of these situations, the surface is porous and penetrable and retains moisture; and it is either a long time undergoing the process of desiccation, or is in a state of alternate dryness and moisture.

“From the whole of the facts and considerations now adduced, in conclusion, I think it may be justly inferred, that, while the surface of the earth is desiccated chiefly in two modes, either by direct solar heat, or by the successive transition of currents of warm air over it, and in general by both combined, wherever the former mode of desiccation predominates over the latter, agues and remittents and similar fevers, will prevail. Desiccation by solar heat alone, or principally, I infer, is extremely productive of the febrile poison; and wherever this process has attained a certain stage, if human beings are exposed to it, they will infallibly be attacked. It cannot be too frequently impressed, that neither what is in common language called a marsh, nor marshy air, is requisite to produce fever; and that any surface which has been previously moistened, and which like calcareous or coralline rock, sandy soil, or argillaceous matter, may retain moisture, and is then subjected to the desiccating process by means of the solar rays, will at a certain period of that process give rise to fever. In this manner, perhaps, are we to explain the fact mentioned by Dr. Bisset, that in 1759, vernal agues were abundant in the dry and elevated districts of Cleveland in Yorkshire, which is regarded generally a very salubrious situation.”

“In situations, on the contrary, in which desiccation is accomplished chiefly by the successive transition of ærial currents, agues are much less likely to prevail; and if these currents are so frequent and considerable as to amount to breezes or winds, they either prevent the generation of the febriferous principle, or they dissipate it as rapidly as it is produced.”

Dr. Craigie rejects the opinion that in the beginning of fever, there is

any affection of the brain and spinal chord, further than is seated in the blood vessels of these parts, in common with the capillary system at large. He doubts whether there is any peculiar affection of the nervous chords, branches, and extremities. It has been ascertained, he says, with considerable accuracy, that the primary effect of fever is sedative, and destructive of the energy of the capillaries and exhalents. When the process of fever is established, it is evidently seated in the capillary net-work; and in those vessels which open in the several membranes and organs. It is not confined to one set of capillaries. It is seated neither in the vessels of the brain and spinal chord, as maintained by Ploucquet, Clutterbuck, and Mills, nor in those of the lungs, nor in those of the alimentary canal, as asserted by Broussais; but it is diffused over the whole minute capillary net-work of the aortic and venous branches of the capillary and exhalent system, in every texture and organ. This does not exclude local affection. In some instances and in certain epidemics, there is a more decided affection of one set of capillaries than of others. In one case, the capillaries of the brain may be most affected, in another those of the lungs, in a third, those of the stomach, in a fourth, those of the liver, in a fifth, those of the intestines, and in a sixth, perhaps, those of the urinary organs.

The blood in ague differs in no respect from that in other healthy states of the body, further than in not being so thoroughly aerated, in consequence of the difficulty with which it moves through the capillary system of the pulmonary artery and veins. The blood moves more slowly than natural, and hence an accumulation takes place. The energy of the muscles of respiration, moreover, is diminished.

The blood moves more slowly than natural through the capillaries. The idea of its increased velocity is gratuitous; when the action of the heart is morbidly accelerated, it does not empty itself at each contraction, if it does so in health. When the contractions of the heart become more frequent, they are less complete and efficient. Much more blood passes through it when it contracts sixty times than when it contracts seventy.

From the first appearance of the febrile symptoms, the energy and vigour of the capillaries and exhalents are immediately destroyed. They become inordinately contracted at the invasion of the disease, and in the cold fit; whereas, in the hot fit, the capillaries become distended, but with a contracted state of the exhalents. This is shown by the injected appearance of the face during the hot fit. The blood is accumulated in the capillaries, but is not removed from them by the veins. Hence congestion takes place throughout the capillary system. This general congestion constitutes the peculiar oppression that has erroneously been regarded as an affection of the nervous system exclusively. This state cannot be proved by anatomical inspection, because individuals are never cut off on the first days of fever. We see only the effect of the morbid action and not the nature of the process itself. But it admits of a satisfactory evidence, by comparing the appearances found in different patients cut off in different states, and throwing aside the phenomena which are manifestly to be regarded as mere effects, selecting only those which, by their constancy, appear to be entitled to the character of causes.

The most usual appearance in fever, is a preternatural accumulation of blood in the capillaries of all the organs, and most particularly in those which are naturally most copiously supplied with blood, for instance, the

brain and spinal chord, the lungs, the liver, the spleen, and the kidneys, and among external organs the muscles and the skin.

These Dr. Craigie considers as facts which cannot be disputed. On their cause, various opinions have prevailed; the chief of which may be referred to two heads: the first, that which ascribes this congestion to some state of the solids; the second, that which ascribes it to some change in the fluids. The vessels of the living body undoubtedly undergo some change from the healthy state, but the nature of this change is matter of conjecture. There is good reason to believe that the innate properties of the vessels, whatever they are, are impaired, and their *tone* or *energy* enfeebled. In a state of health these vessels possess some living power, such as *endosmose* and *exosmose*. If such properties exist they may undoubtedly become impaired.

“That some change or disorder, some impairment of energy in the capillaries, does take place in fever, may be inferred, 1st. from the general phenomena of that disease in which the circulating, nutritious, and secreting functions are very much disordered; 2dly, from the effects of that disease in which we always recognise the chief lesions in the capillaries of the brain, lungs, muscles, &c.; 3dly, from our knowledge of the usual causes of fever, which, in other instances, operate chiefly on the vascular system, or the secreting membranes or organs.”

In regard to the fluids, the blood may be altered in quantity, or in quality. The first Dr. C. considers impossible. The apparent increase is owing to the loss of power in the capillaries to transmit the blood, and the consequent accumulation and congestion. Among those who have supposed the quality of the blood to be altered, Dr. C. particularly notices Dr. Stevens, who infers that the blood loses its saline impregnation in ague. Dr. C. thinks that the facts upon which Dr. Stevens founded his opinions, have not been sufficiently well established to make it necessary to attempt to refute the opinions founded upon them.

Dr. C. concludes that it is possible for some insalubrious materials, probably those which constitute malaria, to be carried along with the blood. In other words, he allows that the blood may be rendered less fit for circulation by the mechanical admixture of foreign matters, but he denies the possibility of a chemical change; excepting that produced by respiration, and by the morbid action of fever itself. The embarrassed respiration, he says, which is seen in the cold stage of ague, cannot continue long without effecting very great changes in the blood. As aëration is essential the blood must be altered after a few paroxysms. As it circulates more slowly than natural, or perhaps stagnates altogether, it does not part with so much of its carbon, nor receive so much oxygen as it does naturally, nor exhale so freely its watery vapour. In consequence of the interruption of the digestive function, the materials of the blood are not renewed; so sanguification must be suspended if not subverted.

The application of these principles to ague is attended, Dr. C. allows, with considerable difficulty, and the most difficult circumstance is to explain in what manner any morbid change of the sanguiferous, or of the nervous system, should continue for a certain time, and then cease, and return again in a certain period. Cullen ascribed the alternations of ague to the general tendency of the human body to diurnal revolution. Darwin and Hildenbrand have advanced different theories, and the most recent speculator on this subject, M. Bailey, has brought forward a doctrine

which Dr. C. considers virtually the same with that of Cullen. According to M. B., these revolutions are merely exaggerated forms of certain natural motions observed in all cases, and more or less regular in the human frame. Each space of twenty-four hours in the human frame, consists of a continued series of excitations or rather congestions. These are the effect of physical and hydraulic laws and show the influence of gravitation and other causes over vital phenomena.

In regard to the treatment of intermittent, Dr. C. recommends rather an active course at the outset.

At the approach of the cold fit, he considers it important to apply heat to the pit of the stomach and the extremities. An opiate, or laudanum applied externally to the spine in combination with soap liniment, equal parts of each, at the approach of the cold stage, has prevented the paroxysm. In other cases, opiates given before the cold fit, have rendered it milder and shorter, and after one or two paroxysms have cured it.

Dr. C. recommends full vomiting at the approach of the cold fit. Twenty, twenty-five, or thirty grains of ipecac., with half a grain to a grain of tartrized antimony may be given at first, and the patient should be made to drink freely of chamomile tea, &c. Dr. Kellie, of Leith, has recommended the application of a ligature upon one of the large arteries of the extremity, as very effectual in preventing the approach of the cold fit or checking it, if applied before its onset; and Dr. C. thinks it proper to employ it.

In recommending the free use of warm drinks in promoting vomiting, our author notices the opinion of Cleghorn, who forbids drinks on the idea, that, as the *vena cava* and the subclavian are loaded with blood, the thoracic duct must be compressed, and, consequently, the fluid contained in the stomach is not absorbed, but distends the whole alimentary canal. He recommends that the patient should only rinse his mouth frequently or use slices of lemon or similar substitutes, which will assuage the thirst. Hildenbrand disapproved of cold drinks. Dr. C. adds that they are more likely to overload the stomach than hot drinks. The latter given with the view of facilitating vomiting, are free from this objection and relieve thirst at the same time.

The very sparing use of fluids in catarrh and in pleurisy, is recommended by Dr. Williams in his lectures which are now publishing in the Medical Gazette. In the latter disease, he would have the patient merely sip from time to time, or rinse his mouth in order to avoid the extreme thirst attendant upon the disease. Catarrhs, he maintains, can be cured with great expedition, by entire or almost entire abstinence from fluids.

If cold drinks are used, Dr. Craigie recommends as preferable, the effervescing drinks, such as soda water, brisk beer, mouthfuls of the saline mixtures, or ptisans with nitre dissolved in them. Animal jelly is recommended by Hallé to diminish the sense of burning at the pit of the stomach, and abate the oppression and anxiety. Some physicians have recommended venesection at the very commencement of the paroxysm in the cold stage. Dr. C. thinks it safest to avoid it, unless particularly indicated. When there are symptoms of local inflammation or congestion, he advises the abstraction of from ten to fifteen or twenty ounces of blood, according to circumstances, succeeded, when required, by the application of from twelve to eighteen leeches. When this is done early according to the concurrent testimony of many authors, it occasionally cuts short the disease, always moderates its severity, and paves the way for the efficient employment of

other remedies. The surface should be sponged with tepid water. Cupping and sinapisms may be used with safety.

In the hot stage, opiates are as useful, as in the cold. Dr. Lind, of Haslar hospital, draws the conclusions; 1st, That they shorten and mitigate the violence of the fit with great certainty. 2dly, They give general relief to the head, diminish the burning heat of the fever, and occasion profuse sweating, with agreeable softness of the skin. 3dly, They induce refreshing sleep with the general extinction of painful and uneasy feeling. Delirium forms their only contra-indication; and when this is present, it is only necessary to wait for its subsidence. Lastly, Dr. Lind maintains that opium is an excellent preparative for the use of the bark. Dr. Craigie says that the proper time for its exhibition is the beginning of the cold fit. If given then, it is unnecessary in the hot one. In simple, open ague, it is unnecessary in the hot fit; in cerebro-meningeal and pneumo-bronchial congestion its use is improper, unless preceded by venesection.

In the sweating stage, the only thing necessary is to keep the patient from exposure.

In regard to the use of bark, it may be given when the urgency of the case requires, in the paroxysm with perfect safety. The great objection to its use at this time seems to be, that the stomach will not bear the bark in substance, and it is consequently rejected. With regard to quinine, this objection would not apply with so much force. Our author gives a full account of the various kinds of bark and the different methods of its administration; and of the various substitutes that have been employed where it could not be obtained. The discovery of quinine has rendered these substitutes useless in cases where the bark in substance could not be borne. Arsenic is the only preparation that can compete with it in efficacy, and it is known that this has succeeded in some cases where the bark has been unavailing. Our author gives an account of the employment of the web of the common spider, which has been used with success by Dr. Jackson, and by Dr. Gillespie of Edinburgh, in the West Indies. Two pills, each containing five grains of cobweb, were given at intervals of two hours, commencing two hours before the anticipated return of the fit.

Cases of ague terminate in death, either by the direct effect on the constitution at large, or by injury done to some organ, the structure and properties of which are essential to life. Death takes place, as it were, by paralysis. In the greater number of fatal terminations, there is reason to believe that mechanical injury of some important organ occurs. Lesions may occur in the brain or its membranes, in the lungs or in the pleura, in the pericardium, in the stomach or in the intestines and in the liver or spleen. *Coma*, or apoplectic death, suffocation, or peripneumony, or some remarkable lesion of the nutritious organs, from gastro-enteric or intestinal disease, are the ordinary modes in which death is caused.

REMITTENT.—Dr. Craigie is disposed to allow the interchangeable nature, the identical origin, and the simultaneous existence of Intermittent and Remittent, though he regards it both as more proper and more useful to distinguish them from each other. The following are the pathological appearances found in those who die of remittent:

“If death takes place early, the surface is only tinged slightly yellow; if later, the yellow tint is deeper and more general and extensive. A dark livid or marbled appearance of the shoulders extending to the hind-head is almost

invariable. Livid blotches or spots on different parts of the person, especially those which were subjected to pressure, are not uncommon; and the scrotum is often livid. Petechial spots are occasionally seen; the belly is tense and tympanitic; and swelling and suppuration of the parotids are sometimes observed."

"The membranes of the brain are always more or less, sometimes very much injected and reddened; serous fluid is effused into the subarachnoid tissue, elevating the arachnoid membrane, and giving it an opaque thickened appearance, simulating coagulable lymph. The convolutions are more or less flattened. The hemispheres often preternaturally adherent. The substance of the brain is firm, but always more vascular, and presenting more numerous minute points and fissures effusing fluid blood than natural. The ventricles contain fluid which is occasionally limpid and colourless, occasionally slightly yellow."

"The lungs are always more or less congested, with dark coloured blood, sometimes presenting appearances of inflammation, as effusion of frothy serum into the pulmonic tissue, and some degree of induration. Lymph is occasionally effused, connecting the pulmonic and costal, and the pulmonic and diaphragmatic *pleura*, with serous fluid in the general cavity of the membrane. The pericardium is in general reddened and injected, and its cavity occupied with more or less serous fluid. Clots of blood and fibrinous matter are found in the right side of the heart and the pulmonary artery, less on the left side."

"The liver is generally rather larger, and more gorged with blood than natural; and the gall-bladder moderately filled with thick ropy bile."

"The peritoneum is in general dull-coloured and grayish, void of its usual lustre, and covered by a ropy glutinous exudation. The omentum is shrivelled and shrunk. The mesenteric vessels are loaded with dark-coloured blood, and sometimes minutely injected. The stomach and intestines are much distended with air, and contain more or less dark-coloured muddy fluid like coffee-grounds, which also tinges the mucus adhering to their mucous membrane. When this is removed by washing, the mucous membrane is found much congested and injected with numerous well-filled red vessels, and occasionally studded with red arborescent or arteroid patches."

"The spleen is generally soft, flaccid, and sometimes completely broken down."

"The urinary bladder is contracted in size, and contains generally a little turbid high-coloured urine; and its mucous membrane is more or less injected with blood."

"The kidneys are more or less injected, and their vessels often loaded with thick semifluid blood."

"These appearances, which indicate the effects of the febrile action on the different organs, show that the force or violence of the action, though operating generally on the whole system of capillary vessels, had nevertheless been most detrimental to the powers of life, by acting on the capillaries of the brain, its membranes, the lungs, the stomach and ileum, and the liver and kidneys."

There is no doubt, he continues, that the vascular system of the muscles must be very much overloaded with blood. The loaded state of the lungs also, and the frothy, ropy, blood-coloured serum found in them is the result of imperfect circulation in the pulmonary artery. One of the effects of the febrile action is doubtless to interrupt the circulation in the pulmonary capillaries, and thereby cause congestion and a sort of passive peripneumony.

The diseased action, though diffused over the whole frame, may be distinguished into three stages. The first is when the head is most affected and the distension of the cerebro-meningeal vessels most conspicuous; and the close of which is marked with temporary abatement, corresponding probably to the commencement of effusion from these vessels, &c. The second is, when the disorder of the gastro-enteric mucous membrane becomes fully established, which is indicated by increase of the burning pain

at the pit of the stomach, incessant vomiting, first of slimy matter, then of dark-coloured fluid, &c. This stage often terminates fatally; but if it do not, the third stage, that of oppressed respiration and pulmonary *asphyria* ensues, and terminates at once the disease and the life of the patient. The dark-coloured fluids ejected by the stomach, proceed from the disorganization of the capillaries, which allows their contents to flow into the cavity of the stomach and intestines. The blood becomes stagnated in these vessels, as they are unable to transmit it to the veins. They are distended beyond the power of spontaneously recovering themselves, and thus finally become disorganized. Dr. C. believes it to be a very erroneous notion, that the yellow tint of the eyes, and the skin of the head, neck, &c. is occasioned by effusion of bile. On the contrary, it is produced by the disorganization of the capillaries of the brain and the gastro-enteric membrane, and the effusion of the sero-albuminous fluid in the former organ, and the sero-sanguineous in the latter. The capillaries of the skin are in the same state of over distension as elsewhere. The stagnated blood undergoes a partial separation, and the numerous minute vessels which at the onset of the fever gave the face and eyes the red and ferret aspect, now give a yellow tinge.

The summer and autumnal remittent, Dr. Craigie considers as identical with yellow fever.

The general intentions in the treatment of this disease, are to unload the capillaries, especially the cerebro-meningeal; and to prevent effusion, the decomposition of the blood, and capillary disorganization.

In the first place, remedies must be employed which act on the capillaries in general and on the head in particular; such as venesection to fifteen, twenty, or twenty-five ounces; shaving the scalp, cupping, cold lotions and affusion, and blisters. The venesection to be repeated when the continuance of the symptoms render it necessary, and leeches applied to the abdomen. Purgatives.

Secondly, remedies must be resorted to which act upon the circulation in the gastro-enteric mucous membrane. Leeches should be applied to the abdomen, not with the same view as in the former case, of relieving the brain by derivation, but in order to relieve the capillary distension in this part. Calomel should also be employed with this view.

Thirdly, remedies which act upon the circulation of the cutaneous capillaries; such as saline diaphoretics and diuretics, cold affusion to the head, and warm fomentations to the extremities.

For alleviating the distressing symptoms of constant epigastric burning and anguish, hiccup, and frequent vomiting of dark-coloured fluid; ether, sulphuric, or nitric, ammoniated tincture of valerian, camphor, musk, and carbonate of ammonia are useful in different cases. Dr. C. considers the use of calomel, except as a cathartic, as proved to be useless or injurious.

YELLOW FEVER. Dr. Craigie considers intense heat as contributing most powerfully to develop yellow fever. The circumstance which appears most general, he says, is that of a calm, windless state of the atmosphere, preceded often by a train of weather uncommon in the particular place of its occurrence. In the West Indies, it is observed, that seasons in which there is the usual compliment of gales, tornadoes, &c., have been free from fever; while the seasons most remarkable for sickness have been equally remarkable for calm weather and absence of winds. The electri-

cal state of the atmosphere has probably its effect in producing the disease. In ordinary circumstances the positive and negative electricities are exactly balanced, but at certain periods, particularly when the sun approaches the meridian of any given place, this equilibrium is subverted; and in order to restore it, not only thunder storms, but often violent hurricanes and torrents of rain take place. Previous to these explosions, there is reason to believe that positive electricity is slowly and gradually accumulated in the atmosphere, and it is this condition that appears to favour the disease.

After a survey of the various opinions in regard to the causes of yellow fever, our author draws the conclusion that it is a disease proceeding not from the influence of terrestrial *miasmata* or mere local peculiarities alone, but from atmospherical peculiarities entirely; which, however, operate much more directly and forcibly in situations favourable to the production of terrestrial emanations. While ague is the product of the marsh, and remittent is the effect of a more concentrated form of the same exhalation from any moist surface in the process of solar desiccation, yellow fever appears to be the exclusive product of that state of atmosphere which takes place after a long continuance of solar heat, with little or no wind, in those points chiefly where the action of the sea and land are in constant communion and interchange. It is rare in the interior, or even upon the margin of great rivers, further from their mouths than the extent of the tides. "Yellow fever becomes epidemic, neither in consequence of intense temperature alone, nor humidity alone, nor filth, nor the presence of foul docks and wharves, nor desiccated marshes, nor decomposed cabbages, or coffee, or mangroves, nor even charred shipholds, but a certain condition of the atmosphere, which recurs at very uncertain intervals, and of the recurrence of which the circumstances now enumerated are indications."

Dr. Craigie considers the rapid decomposition of vegetable substances, not a *cause* but an *indication* of a febriferous state of the atmosphere. He draws certain conclusions in regard to the propagations of the disease which he expresses in the form of ten aphorisms; the first two of which are the principal. These are in substance, that yellow fever is the spontaneous product of the atmosphere, operating on the sea coast or beach, in tropical or warm climates, and in hot seasons elsewhere. Whether regarded as the ordinary remittent modified by atmospheric agency, or as a distinct and specific disease, its formation and development always depend on climate and atmospherical influence, co-operating with local causes. 2d. If these causes are admitted they will continue to exist after the first appearance of the epidemic. It is therefore unnecessary and unphilosophical to resort to the assumption of personal infection or transmission.

With regard to the pathology of yellow fever, Dr. C. concludes that by carefully comparing the combined succession of phenomena in the living frame during the disease, with the appearances presented by the organs after death, we shall arrive at the conclusion that it is a peculiar subversion of the action of the capillaries of the whole system tending to the disorganization of that vascular net work; and proving fatal by the deleterious influence of this subverted action on the brain and its membranes, and the stomach, duodenum, and ileum. This process is not *increased action*. The action of the heart, indeed, is at first augmented by the irritative stimulus in the capillaries, in which the real seat of the disorder is established.

"The action of the capillaries and exhalents is impaired, enfeebled, and deranged; the motion of the blood is thereby retarded and finally interrupted; the requisite changes are not effected; and while the capillary system is thus overloaded with dark unchanged and unrespired blood, which speedily becomes disorganised, their apertures eventually give way, and allow the escape of serum or blood in various tissues and organs. Thus, discharges of serum or blood take place into the cerebral chambers; and serum with albuminous flakes first, and disorganized blood afterwards, escapes into the cavities of the mucous organs, as the stomach and intestines."

This is the source of the coffee ground discharge. This stagnation and disorganization of the circulating fluid, pervades the capillaries of the mucous surfaces generally, and those of the skin. Incisions into these parts show that the constituent parts of the blood are broken down and extravasated. While in some parts serum is effused only; in others, serum tinged with a faint brownish red, and in others, actual imbrowned blood, void of its usual cohesion and tenacity, is effused. This is a real disorganization of the circulating fluid.

Yellow fever consists, therefore, in a general affection of all the capillary vessels of the whole frame and all the organs. The vascular disorder is most conspicuous in the brain, in the gastro-enteric mucous membrane, and in the skin. The primary cause of this vascular disorder may be referred to two heads; 1st, an affection of the containing vessels; and 2dly, some change in their contents. Which is the primary one, is doubtful. It seems almost certain, that the solid tissues of the vessels are in some manner deprived of their usual properties, and are, for the time, rendered unable to circulate the blood and contribute to the different secretions. Hence they become congested.

Among the various hypotheses in regard to the supposed changes in the blood, Dr. C. regards that of Dr. Stevens as the most tangible and intelligible; that in yellow fever, as in other fevers, the blood is deprived of its saline impregnation and alkaline properties, and hence becomes darker, less fluid, and less fitted for use. This hypothesis, he says, may be applicable in some cases but not in all. The most intense yellow fever attacks some Europeans so immediately after their arrival in a tropical part, that it is impossible to suppose that the constitution of the blood had, in so short a time, undergone so great a change; and conversely, persons who have been long exposed to the action of causes that might, according to Dr. Stevens, deprive the blood of its saline impregnation, are not more frequently attacked with yellow fever than others. In tropical climates, where yellow fever principally takes place, it has been observed, that all the secretions are more saline than in temperate. In short, all that can be concluded on this point is, that we have no positive facts on the influence of the changes in the chemical or mechanical qualities of the blood, in producing yellow fever.

The treatment of yellow fever recommended by Dr. Craigie is in conformity to his views of the pathology of the disease. He thinks that two objects are to be kept steadily in view. The first is, to abate and remove the excessive congestion and distension of the capillaries, so as to prevent stagnation and consequent extravasation. The second is, to employ such measures as tend to restore and maintain the various secretions. For the first object, the great means are general and local blood-letting, efficient purgatives, and cold applications to the head, such as the douche, iced water, or bladders filled with ice. Calomel from six to ten grains, with

scammony or extract of colocynth, &c. For the second intention, the body should be washed with soap and warm water; the patient enveloped in blankets wrung out of hot salt water, and the cold affusion applied to the head. Acetate of ammonia, James's powder, antimonial powder, either with or without calomel, may be given in equal parts of ten grains each, every second or third hour. Blisters, sinapisms, &c., are sometimes useful. When there are symptoms of obstruction in the liver, calomel or blue pill may be given after the active symptoms have terminated.

Where the character of the symptoms is that of congestion of the whole vascular system, and consequent oppression of the vital organs and restraint of all their actions, medical treatment is much less efficient and must be greatly modified. Venesection is improper, because, although the large vessels may be emptied in this manner, the capillary system is not so promptly relieved. The principal remedial agents should be the warm bath, soap and hot water, after which the skin should be rubbed dry with a flesh brush; spirituous and stimulating embrocations are useful. If venesection is indicated by any particular symptoms, it may be employed to the extent of ten or twelve ounces, also cathartics or enemata, and calomel. M. Dalmas, Dr. Stevens and others have censured the use of calomel. The latter, Dr. G. W. Stedman, and others, have employed saline remedies, given in such a manner as not to purge, as is averred, with great success. Dr. Craigie observes, that the principal objections to the results given by Dr. Stevens, are that the success seems too great for the means used.

Dr. Craigie proceeds next to continued fevers. Of these he makes four varieties. The first of these is synocha, or simple inflammatory fever, inflammatory fever without any particular local affection. The pathology of this he conceives to consist, like that of the fore-mentioned fevers, in a congestion of the general capillary system.

Dr. Craigie, as we have already mentioned, considers it very doubtful whether any case of fever is, at the onset, attended with any peculiar local affection. In every fever, there is to a greater or less degree an affection of the whole capillary system, and as the disease advances, some sets become more diseased than others. In this way, only can a local affection exist. It comes then simply to be a question whether the description is taken from the beginning or the termination of the whole course of disease. If a fever come to its termination on the second, third or fifth day, it may do so without manifesting any particular direction. It is true that such febrile attacks seem to be attended with the suppression of some habitual discharge, such as menstruation, for example.

Dr. C. divides continued fevers into, first, simple fever with much affection of the sanguiferous system. Secondly, fevers in which the derangement of the circulation is connected with distinct disorder of one or more vital organs, and a tendency to disorganization or disruption of the capillaries.

In the latter class is gastric, gastro-splenic, or gastro-enteric fever. A. With disorder of the stomach or spleen, intestinal tube, or liver. B. Fever with general affection of all the tissues and organs, and tendency to capillary disorganization in the most vascular.

a. Slow nervous fever; b. putrid or pestilential, spotted or malignant fever. c. Common or mixed continued fever.

Our author divides his second class of fevers into the three varieties above named; gastric, gastro-splenic or gastro-enteric, according as the stomach, spleen, or intestines, are most affected.

"The entero-mesenteric fever of Petit and Serres, in which the aggregated glands of the intestines are affected, must be regarded as an intense form of the latter disease, (intestinal fever,) or as fever taking place in persons who have previously laboured under *dothineritis*."

In proceeding to the division B. Dr. Craigie remarks that there is reason to doubt whether physicians and medical observers have attended with sufficient care to the distinctions of the different kinds of continued fever established by Cullen. This author says, "I think that the limits between *synochus* and *typhus* will be with difficulty assigned; and I am disposed to believe that the *synochus* arises from the same cause as typhus and is therefore only a variety of it." We give these words as quoted by Dr. Craigie, because the authority of Cullen has lately been adduced as an obstacle to the abandonment of the distinction between typhus and synochus, which the advancement of our knowledge on the subject of fever has apparently rendered expedient. The quotation above, together with a note also quoted by Dr. Craigie, shows that Cullen considered typhus and synochus to differ principally in degree.

It seems somewhat surprising that Dr. Craigie, writing in 1836, makes no mention, either in his text or in the list of books at the head of his chapters, of the most recent authors upon the subject of fever. He says nothing of Louis, nor even of Southwood Smith or Tweedie. This may perhaps be accounted for by this part of the work having been written, as it would seem, at a date considerably antecedent to its publication. We find references to later works, as we proceed in the volume. This omission in regard to fever is very unfortunate, since the labours of Louis have created a new æra in medicine. The universal acceptance, which the observations of this writer have met with, and the general adoption of his methods of inquiry, open on an entirely new field of discovery in regard to the subject, and make our knowledge constantly progressive.

Dr. Williams (*Elements of Medicine*) unites typhus and synochus under one head. Dr. Jackson of Boston, whose opinions, from his experience, the opportunities for examination he has enjoyed, and the attention he has given to the subject, are worthy of the utmost respect, considers the typhoid fever of New England and probably that of Old England as the same with that of Louis, while the typhus fever described by Dr. Gerhard in this Journal resembles that described by Dr. Lombard of Geneva, as witnessed by him in Ireland and also in England.

Our author describes in his last section of fevers; "fever with a tendency to gangrenous inflammation and affection of the glands."—The plague. Upon this subject, he gives us a full and well executed account of the plague, embracing the facts that have been made known by the various writers upon the subject. His views of its pathology are in coincidence with those in relation to other fevers. He thus sums them up:

"In short, I think it inevitably results from the anatomical facts and the symptoms of the distemper, that in plague the capillary system of the whole frame is suddenly smitten by a species of atony or loss of power of transmission, and that a consequent stagnation of blood and all its consequences ensue."

When this is intense and irreparable, it kills immediately; or within a few hours or a day at most; and the phenomena are those of death by *hæmastasis*. If the capillary vessels of the organs have sufficient energy to resist this species of sudden inertia, it is only at the expense of death taking place in certain points of the skin, and suppurative disorganization in the lymphatic glands.

Dr. Craigie seems to adopt in regard to fever, a modification of the views of Cullen. Instead of *spasm*, Dr. C. supposes a *palsy* of the extreme vessels. How far it is philosophical to look to remote branches for the origin of a general disease, we have not opportunity to discuss. It is certainly more in accordance with common practice, if not with nature, to look to the fountain head for the source of the impurities which are found in the remote streams. Nor can we readily understand, how vessels, which pervade the whole surface of the body, should be suddenly and simultaneously affected by an external cause, unless by the agency of a power which has generally been conceived to belong to the nerves alone—the supposed instruments of sympathy of distant parts. If this power is conceded to the capillaries, we have then two sets of vessels possessing similar powers. On the other hand, if the nerves are the agents by which this consent or simultaneous action is produced, we are brought back to the doctrine of Southwood Smith and others, which makes the nerves the parts primarily affected in fever; which doctrine is rejected by Dr. Craigie.

We come next to the second part of the volume, Book II, which treats of inflammations. The account of general inflammation need not detain us. The subject is a familiar one, and perhaps we have not as yet any writer who can compete with John Hunter in authority; and therefore we are not to look for any thing very new. Dr. Craigie draws from familiar sources, Hunter, Thompson, James, &c., and his views of the proximate cause of inflammation agree with those on fever; that it is seated in the minute vessels arterial and venous, termed the capillaries.

He treats of inflammations as they appear. I. In the skin. II. In the mucous membranes. III. In the serous membranes. IV. In the compound organs. V. In various tissues, simultaneously or successively.

Our author considers all cutaneous affections as merely different forms which inflammation may assume in the skin. 1st. Cutaneous inflammation may be seated in the exterior or cuticular surface of the chorion. 2dly. It may be found round the *papillæ* or minute elevations of the chorion. 3dly. It may affect the substance of the chorion. 4thly. It may occur at the inner or attached surface of the chorion.

Dr. C. undertakes to classify inflammations of the skin, according to the part of it in which they are seated, according to the mode in which the inflammatory action proceeds, and according to the effect which it produces.

He makes the eight following divisions.

1. Diffuse or Spreading Inflammation, such as Measles, Scarlet Fever, &c.
2. Effusive Inflammation, such as Erysipelas.
3. Punctuate Papular Inflammation, such as Strophulus, Prurigo.
4. Punctuate Desquamating Inflammation, such as Lepra.
5. Punctuate Vesicular Inflammation, such as Herpes.
6. Punctuate Phlegmonous or Pustular Inflammation, such as Variola.
7. Punctuate Chronic Phlegmonous Inflammation, such as Boil, &c.
8. Punctuate Phlegmono-Tubercular Inflammation Chronic, such as Elephantiasis.

The subject of venesection in scarlet fever is one about which there has been much controversy. Our author says it should be used only where there is much oppression or pain of the head or chest, after the eruption is out, and at the early stage of the eruption. When employed, fifteen,

twenty, or twenty-five ounces of blood should be taken in case of the adult.

In regard to erysipelas or "rose," our author seems to make no distinction between the erysipelalous fever of Sydenham and the erysipelalous inflammation of John Hunter; for while he includes the former among his synonymes, with *rosa*, erysipelas, St. Anthony's fire, *ignis sacer*, &c., he tells us that John Hunter is the first who has observed the disease with a discriminating eye. He does not hint that there may be any thing peculiar in the inflammation, but regards it as a *burn* produced by an internal cause. In a recent number of the *Edinburgh Medical and Surgical Journal*, Dr. Craigie has given an account of what he considers to be diffuse adipose inflammation, which will include much of what has heretofore been described as erysipelas. The various classifications that have been made of diseases which have had at some time the appellation of erysipelas, have formed a skein so entangled, that it is no easy task to say what is and what is not erysipelas. We think, however, that until the subject is better understood, there is ground for the distinction between the erysipelalous fever of Sydenham and the erysipelalous inflammation of John Hunter, although they may be convertible and of the same nature. We have our doubts, also, whether the disease, or peculiar eruption caused by eating certain fish, can properly be considered as erysipelas, as it has been by our author and many other writers, for one reason among others, that it occurs in healthy persons, not predisposed to erysipelas, while erysipelas requires a certain state of constitution to favour its reception.

The treatment of erysipelas our author would have conducted on the general antiphlogistic plan, adapting it to the particular form of the disease; and considering the indications to be to relieve capillary oppression. Of course, the employment of tonics, which has lately been revived at some of the English hospitals, is entirely averse to this, and we find no mention of their use. Dr. Craigie does not profess to give an account of the various modes of treating diseases, but only those methods which he considers best.

It has become a matter of considerable interest, to know with certainty, how far the immunity afforded by cow-pox against the attacks of small-pox extends, and what reliance is to be placed upon it. It has been supposed by most physicians, until recently, that the opinion entertained by Jenner, of the perfect protection afforded by vaccination when well performed, was correct. Recent experience, however, has proved that this is not exactly the case. According to Dr. Craigie, the researches of Dr. Thompson of Edinburgh, and of many others, have shown that Jenner's views must be received with the following modifications.

"The human body is liable to be attacked with small-pox more than once in the duration of life. Every previous attack modifies that which follows; and a person who has once undergone the disease, though he may be subsequently affected with it, undergoes it in a different form. In the same manner, an individual who has suffered cow-pox may be attacked with small-pox, exactly as one who has suffered small-pox may be again attacked with that disease. A person, however, who has suffered cow-pox, is not only much less likely than another to be affected with small-pox even when epidemic, but will certainly have them in a much milder form, and in a form which is almost impossible to prove fatal. He may have the disease in what is termed the *modified form*, or in that named chicken-pox; and according to the experience of the epidemic of 1816—1820, one death takes place in 330 thus affected; and it is probable that

more extensive experience would show the proportion of mortality to be much greater than it really is."

The extent of Dr. Craigie's volume allows of pretty full treatises upon the most important diseases discussed; and we find a very full account of small-pox. Under this head, he resumes the subject of the protection afforded by vaccination.

His conclusions are as follows:

1st. Small-pox, though, in general, it occurs only once during life, may, however, attack a second or even a third time.

2d. A second attack is more frequent when the first is mild. If the first attack be confluent, a second is rare.

3d. An attack of spurious small-pox, or of chicken-pox, does not secure from the confluent small-pox.

4th. Small-pox from inoculation does not secure from the natural small-pox.

5th. Every previous attack modifies the subsequent.

6th. The most powerful modifying agent of small-pox is cow-pox; vaccine and variolous matter applied together, counteract each other.

7th. Cow-pox destroys the susceptibility to inoculated small-pox almost entirely, but the susceptibility to the natural disease or that by inoculation, it does not extinguish. This susceptibility, however, it diminishes in a much greater degree than inoculated small-pox.

8th. The susceptibility to a second attack of small-pox, and to attacks of small-pox after inoculation, is principally favoured by the existence of an epidemic constitution of the atmosphere, and by early life, especially an age below ten years. If no epidemical constitution take place, the occurrence of second attacks may not be observed for a long series of years. But if the atmosphere acquire an epidemic or variolous constitution, neither the circumstance of a previous attack, nor vaccination, can secure many of those under ten years of age, and but a few between that and thirty, from small pox.

On the subject of chicken-pox, Dr. Craigie, after mentioning the views of Dr. Thompson, in regard to its identity with small-pox, expresses the opinion that the exquisite and well-marked cases of chicken-pox may be distinguished from exquisite and well-marked cases of small-pox; while other cases glide into each other.

It would seem that this question might be very easily settled. Small-pox is confessedly one of the most contagious of diseases—one of the few that the most zealous anti-contagionists make no dispute about. Now, chicken-pox is a very common disease, and if it can be proved in any one case to have produced small-pox, there can be no doubt that they proceed from the same virus. We do not know that any such case has occurred. If in a disease so common as chicken-pox, this has never been proved to be the case, we think the distinction between them is well founded.

Our author describes several cutaneous diseases, which have been little noticed by writers in general, and which are not known among us; such as Sibbens, Radesyge, Asturian Rose, Pellagra, Cayenne Leprosy, &c. These we shall pass over, and proceed to the second chapter of Inflammations—inflammation of the mucous membrane. He gives the following account of the commencement of inflammation in this membrane.

"When a mucous membrane is attacked with inflammation, besides the usual phenomena of redness, heat, pain, and swelling, it presents other phenomena in

the change or perversion of its action. It is first, unusually dry, and then begins to secrete a thin serous fluid, which principally, from the rawness of the surface, seems to possess acrimonious or irritating properties. The surface of the membrane is raw, sore, and extremely tender; and the application of foreign bodies produces much uneasiness and distress. After the lapse of a few hours or a day, sometimes a longer space, the preternatural dryness abates, the thin serous fluid becomes thick, and more or less copious, and though the rawness, tenderness, and soreness, are little abated, or may continue unchanged or even increasing, the redness is less deep, and the swelling less intense."

This state may either suddenly ensue upon an apparently healthy state of the membrane, or it may come on more slowly after the membrane has been raw, tender, and sore, and sensitive to the air or to the application of foreign bodies. In the first case, the inflammatory process is the immediate and direct consequence of the action of the exciting causes on the membrane. In the second case, it is preceded by a state of general soreness and suffering, which does not admit of the application of foreign bodies, or the performance of the usual motions which the membrane may undergo in the state of health without producing uneasiness. The latter state is denominated irritation, into the doctrine of which our author enters very fully.

Dr. C. adopts the terminations in *ia* instead of those in *itis*, to distinguish inflammation. Thus we find bronchia for bronchitis, gasteria for gastric catarrh, ureteria for inflammation of the ureter, urethria for gonorrhœa, colonia for dysentery. It is much to be regretted, that one nomenclature cannot be adhered to, and universally employed.

We pass over ophthalmia, coryza, otitis, tympanitis, and aphtha, and come to angina diffusa or gangrenosa. This is the sore throat that in general accompanies scarlet fever, but which sometimes occurs as a distinct disease. The next described disease is croup. Upon this subject our author has little that is novel. We are in the habit of considering that true croup is always fatal; if it is not fatal, it is not croup. Our author informs us that the disease may terminate favourably in three days.

"*First.* After the symptoms have attained a considerable height, they gradually recede. The pulse becomes fuller and softer, generally less frequent, though this is not so conspicuous; the skin becomes moist, the cough loose, and the breathing easy, and the voice gradually recovers its natural tone. *Secondly.* After the disease has continued a few days, a white viscid tubular substance, of the consistence of membrane, and hence termed the membrane of croup, is expectorated, and the child is relieved. The discharge of this substance, however, produces in general, a mere remission of the symptoms, and does not affect the course of the disease. *Thirdly.* Croup may be a more chronic affection, and not subside for several weeks, when the resolution is gradual; the child expectorating puriform mucus freely, and now and then membranous films."

Dr. C. distinguishes cynanche laryngea, which he says is still confounded by many writers, both in Great Britain and elsewhere, with croup. Dr. Good and others made this distinction long ago, and we believe it has been pretty generally adopted.

Chronic catarrh or bronchitis is described by our author as the most frequent of pulmonary complaints; and he says that it may be considered as certain that in the greater number of consumptive cases, chronic inflammation of the bronchial membrane is either the principal or the only pathological action. He quotes Rush as his authority for the prevalence

of the complaint in America generally. But upon this subject, the authority of Rush must be considered obsolete. Fatal cases of chronic bronchitis we believe are very rare, and post-mortem examinations show the existence of tubercles in the lungs of all, or nearly all of those who die from consumption. Dr. Craigie describes another variety of bronchial inflammation, chiefly distinguished by the nature of the exciting cause.

“Foreign bodies, such as teeth, natural or artificial, pieces of metal, wood or bones, which pass the glottis and drop into the windpipe, if they do not produce immediate suffocation, cause irritation of the windpipe, *bronchi*, and bronchial membrane, indicated by fits of coughing, more or less continued and severe, wheezing, breathlessness, and weight and oppression in the chest.”

“2dly. These symptoms of irritation are speedily succeeded by symptoms of inflammation, sometimes acute, sometimes chronic, but always afterwards becoming chronic, indicated by cough, expectoration of dense puriform or purulent mucus, occasionally streaked with blood; weight and anxiety in the chest, quick pulse and eventually hectic fever with wasting.”

“3dly. These bodies, there is reason to believe from their size and shape, must be arrested in the larger or middle sized bronchial tubes; and it must be anatomically and physically impossible for them to descend into the smaller tubes or the pulmonary vesicles.”

“4thly. In all the recorded cases, the symptoms, however intense during the abode of the body in the *bronchi*, and though enduring for the space of from six to seven weeks, as in the cases of Borsieri, Dr. Donaldson, and Dr. J. Scott, to that of several months, as in the case by Dr. Lettsom, that of Dr. Nooth, and the case by Mr. Howship, rapidly subsided as soon as the foreign body was ejected.”

On the whole, our author seems to be more of a conservative than a reformer in medicine. We find that his references and his bibliographical lists contain the names chiefly of those whom time has rendered venerable or at least has confirmed and sanctioned, while more recent medical literature is treated with neglect. Our readers must not, therefore, resort to the work with the expectation of finding much novelty. It is valuable as a compilation, drawn from the best established sources, in which the reader will find the various opinions and observations of authors of reputation drawn into small compass, and as far as possible reconciled. The task our author has attempted is no easy one, and one which he could not be expected to accomplish in an altogether faultless manner. At least it cannot be expected that any general treatise on medicine in which the author expresses his own opinions; or attempts to reconcile those of others by his own judgment and experience, will not contain many errors and omissions in the eyes of those whose opinions differ from his. Dr. Craigie, as this work testifies, is well qualified from his sound judgment, learning, and research, to execute such an undertaking, and we consider his treatise a very valuable one both to the student and the medical practitioner.

E. W.

BIBLIOGRAPHICAL NOTICES.

ART. XIII. *Zur-Jubel Feier des Professor Emeritus, Dr. Johann Busch, in St. Petersburg, am 26sten Mai, 1838.* 4to pp. 32. St. Petersburg, 1838.

THIS appears to be an address delivered at a jubilee given to Dr. JOHN BUSCH, on the completion of the fiftieth year of his professional life, May 26th, 1838, by the Association of German Physicians in St. Petersburg, of which Society Dr. Busch was one of the original members, and for many years Director.

The address comprises a brief sketch of the origin and objects of the association, and of its transactions since its organization in 1819, to the period when the jubilee took place.

The very concise manner in which most of the subjects of a practical interest, embraced in the address, are treated, prevents us from giving any thing like a satisfactory account of them.

The following brief notice will enable our readers, however, to understand the general scope of the address.

In presenting a notice of the various papers contained in the several volumes of the Society's transactions, general allusion is made to the extensive experience of Dr. Harder, in regard to the efficacy of cold affusions in various complaints. In scarlet fever, in bronchitis and in croup he has found decided benefit from their employment; the peculiar circumstances under which the remedy is administered are not, however, detailed. An almost hopeless case of croup successfully treated by this remedy was reported to the Society by Dr. Müller; and its curative powers in mania, hypochondriasis and melancholia are fully confirmed by Dr. Mylius. A general view is given of the epidemical constitution of the atmosphere at St. Petersburg, for the last nineteen years, which is too long for insertion in the present bibliography, and will not well admit of condensation.

Appended to the address are the outlines of an interesting case of bony tumour on the occiput, with a lithographic illustration.

The patient, a miller by trade, was admitted, in his eightieth year, into the hospital, in consequence of inflammation of the brain, where he died. According to his own account, in his sixth year the tumour on his occiput had first appeared, subsequent to the sudden disappearance of an eruptive disease of the scalp. Poultices were applied to it, under the use of which it became soft, and breaking, gave discharge to purulent matter, which continued to flow for a long time; the opening, however, finally closed. The size of the tumour, which was then moveable and without pain, decreased. In his twentieth year the patient consulted many physicians, by whose advice, after fruitless attempts had been made to empty the tumour of its supposed contents by puncturing it, a ligature of silver wire was applied around its base. The inflammation and pain to which the ligature gave rise, caused this plan of treatment, however, to be speedily relinquished. The tumour which had hitherto been movable had now become firmly attached to the occiput, and on its right side presented a stellated cicatrix at the spot where the puncture had been made. No further attempts were instituted for the removal of the tumour. At the period of the patient's death, the tumour had a somewhat oval form, and measured at its greatest circumference one foot eleven inches and a half,—across, from ear to ear, one foot seven inches and a half—at its basis, one foot three inches and a half, and from its upper to

its lower part one foot nine inches. It was covered by the hairy scalp, which was so stretched in consequence, that the hairs upon that portion which appertained to the tumour stood further apart from each other than upon the head. The scalp as it passed from the tumour to the back of the neck formed a fold or duplicature nearly three inches thick, forming at the sides of the neck deep depressions, presenting a peculiar wrinkled appearance. The stretching of the scalp had caused the external ears to acquire an enormous size. The internal structure of the tumour was composed of a cellulated mass of bone as hard as ivory. In the cells was contained a yellow substance resembling spermaceti. The united tendons of the musculus epicranii, trapezius and digastricus cervicis were in their course spread out over the tumour. The galea aponeurotica was folded around the basis of the tumour, and from beneath it innumerable small vessels passed into the substance of the tumour. By the pressure of the latter, which weighed ten pounds, the outer table of the occipital bone, from the occipital protuberance to the foramen magnum, was entirely destroyed, and the posterior arch of the first two cervical vertebræ were reduced to a thin plate of bone.

Together with a lithographic drawing, a somewhat remarkable case is given of a bifurcation of the aorta, in a boy three years old, which is deficient, however, in many important details.

The patient had been admitted into the hospital for infants, the preceding year, in consequence of an inflammation of the chest, and discharged cured. On the 4th of January, 1838, he was again admitted. He now complained of a peculiar pain in the left side of the chest—the respiration was impeded; the action of the heart unnaturally strong; the pulse small and contracted. The countenance exhibited a peculiar expression of anxiety, and the cheeks had a slight bluish tint. After the repeated application of leeches to the chest, and the use of digitalis inwardly, an apparent improvement took place in the patient's condition. The same symptoms, however, soon reappeared; and on the eighth day of his residence in the hospital, œdema of the feet occurred with anasarca swelling of the other parts of the body; the general symptoms appearing at the same time to be relieved. The case remained in this state, until the 13th of January, when the patient, after a slight supper, suddenly complained of great difficulty of respiration, and, with a slight cough, discharged a quantity of mucus intermixed with a portion of bright coloured blood. The pulse soon became intermitting, the extremities cold, the cheeks assumed a bluish colour, and the whole countenance exhibited the utmost anguish. Four ounces of blood were taken from the arm, which for a short period gave great apparent relief; but hiccough and death soon followed.

On opening the body a considerable collection of blood was discovered in the left side of the chest, and evident traces of cardiac inflammation. Besides these, the aorta was found to be bifurcated at its upper extremity, forming an arch to the right, and one to the left; from the right arch was given off the right subclavian; from the left, the left carotid and left subclavian, while the right carotid arose from the part at which the two arches united below to form the thoracic aorta, at which spot the vessel presented a sack-like enlargement.

A brief notice is given of a curious case of urinary calculi, with a drawing of the kidney and bladder of the patient, exhibiting a rather uncommon diseased condition of these parts. We translate the entire note of the case.

"I. M., 35 years old, had complained for many years of symptoms indicative of urinary calculi; admitted into the Surgical clinic of the the Medico-chirurgical academy of St. Petersburg, with symptoms of gangrene of the abdomen; in the course of ten hours death occurred. The autopsy exhibited an inflammation of the urinary bladder which had terminated in gangrene, and also a gangrenous abscess of the left kidney, extending thence downwards to the pelvis. There existed in the thickened and contracted bladder a round calculus of the size of an egg; three other calculi, each about an inch in diameter, lay in a cylindrical, membranous sac which occupied the space between the bladder and rectum. This sac opened below into the bladder near the orifice of the right ureter which was somewhat dilated, and above it

communicated with the abscess in the kidney. Both kidneys were in a softened condition, and their cortical substance was almost entirely destroyed."
D. F. C.

ART. XIV. *Dissertatio Medica Inauguralis de Cartilaginum articularium ex morbis mutatione.* Auctore L. H. SCHUMER, Jr. Groningen, 1836. 8vo. pp. 64.
An Inaugural Dissertation on the Morbid Changes occurring in the Articular Cartilages. By L. H. SCHUMER, Jr.

THE object of this dissertation is to prove that the articular cartilages are inorganic, so far at least as regards the non existence in them of either nerves, blood vessels or lymphatics. The author endeavours to show, with much plausibility, that the proper articular cartilages are the result of an exudation from either the synovial membrane, or from the vessels of the extremity of the bones which form the joint, and consequently that all the morbid changes these cartilages undergo, are dependent solely upon disease of the parts by which they were originally produced. He has attempted to prove by direct experiments on animals, that where the most violent inflammation is excited in the joints, the cartilages present no indications, in any instance, that the disease extends to them; and even when to all appearance a part of them has been removed by ulceration, or they are entirely destroyed, leaving the ends of the bones denuded, this is merely the result of a softening of the cartilage caused by its immersion in the pus poured into the cavity of the joint from the inflamed vessels of the synovial sac.

The inorganic character of cartilages is, in the opinion of the author, established by the fact, that no vessels can be shown to enter in their structure by the minutest examination by the naked eye or by the microscope, even after the most accurate injection of the surrounding vessels—that blood has never been seen to flow from them when wounded, nor have they ever been observed to become reddened, like other of the white tissues, when subjected to irritation. In evidence of these statements, he adduces the testimony of Sebastian, Soemmering, Chassaignac, &c., and the results of his own experiments on living animals.

To show that the formation, nutrition and morbid changes of the articular cartilages are capable of a ready explanation, without supposing the existence in them of blood vessels and absorbents, the author adduces several facts of the production, reparation after injuries, and mutation from disease, of other parts of the body universally acknowledged to be inorganic in the proper acceptance of the term; as for instance, the cuticle, the lens of the eye, &c. There exists, he conceives, a very close resemblance between the physiological condition of the ocular lens and the cartilages of the joints. Both have their appropriate membranes, the lens its capsule and the articular cartilages the synovial sac, over both of which blood vessels are distributed. In the eye a fluid is interposed between the lens and its capsule, and in the joints, the synovia is found between the cartilages and the membrane.* The existence of blood vessels in the substance of the lens, or in that of the articular cartilages, has never been demonstrated. The author remarks that the lens has been supposed to be formed from and sustained by the fluid of its capsule, and he considers it possible that the articular cartilages may in the same manner be formed from, and sustained by, the synovial fluid which contains in solution all the principles that enter into their composition; he, nevertheless, considers it as more probable that the cartilages are secreted, and any reparation which takes place in them when injured, or morbidly affected, is caused by the blood vessels of the spongy extremity of the bones which they envelope.

The leading facts and experiments detailed by the author are certainly interesting, and important—his reasoning is very generally correct, and his main conclusions coincide with the opinions maintained by several of the most distinguished of the continental physiologists.
D. F. C.

* "In articulis inter cartilaginem et synovialem membranam itidem humor sc. synovia."

ART. XV. *Dissertatio Medica Inauguralis, de Effectibus Tumorum uteri fibrosorum et Symptomatibus quæ iidem provocant.* Auctore JOHANNE ROEMER. Groningen, 1837, 8vo. pp. 44.

An Inaugural Dissertation on Fibrous Tumours of the Uterus, and the symptoms, and morbid changes to which they give rise. By J. A. ROEMER.

THE leading particulars connected with the various fibrous tumours affecting the uterus, are very accurately, though concisely set forth in this essay. In the details given by the author, we discover, however, nothing particularly novel, or which may not be found in the works of the recent writers on the diseases of females. The diagnosis of the ordinary tumours appertaining, strictly speaking, to the uterus, is by no means attended with very serious difficulty. In relation to their causes, and proper treatment, however, there is still much information to be acquired; but upon neither of these particulars, has the author of the essay before us, attempted to throw any light; hence, we have not considered it necessary to present any thing further than a general notice of the work. While, we may remark, it confers great credit upon the writer as an industrious and close observer, it is far too concise to convey to the practitioner the information he requires in relation to morbid affections of which it treats. D. F. C.

ART. XVI. *Meine Methode de Taubheit zu heilen.*

My mode of treating Deafness. By C. W. HUFELAND, M. D. Berlin, 1834.

THIS little essay is not so important from any novelty in the therapeutic views of the author, as because it conveys a striking impression of that fondness for multiplying remedies which seems to be peculiar to the German practitioner, and which, when expending itself on so delicate a structure as the ear, could hardly be indulged in without some hazard.

In all obstinate and deep-seated affections of the ear, the author keeps in view four indications. 1. To promote the activity of the skin, the functions of which will often be found to have been primarily disturbed. 2. To regulate the condition of the alimentary canal and of the digestive system generally. 3. To stimulate the absorbents of the ear itself.

The first step in fulfilling these indications, is to apply 6 or 8 cups to the back of the neck, for the double purpose of depletion and derivation. The patient is then ordered to take, morning and evening, half of the following powder: R, resin. guiac. 3ss. calomel, sulph. ant. aurat. āā gr. ij, eleosacchar feniculi, ℥j. M. f. pulvis. This powder must be taken in such dose as to move the bowels two or three times daily, and may afterwards be increased or diminished according to circumstances. This treatment may be persevered in for 14 days, then omitted for 8, then resumed for 14, and so on for several months, until a cure is effected or its inefficacy becomes obvious.

At the same time with the above treatment, a piece of the following ointment as large as a pea, is rubbed over the mastoid process. R. pulv. canth. ℥ss; ung. ros. 3j, M. so as to keep up a constant purulent discharge over a small surface and thus stimulate the nervous system of the ear.

In the next place a portion of the following powder is each day to be thrown into the nose. R. herb. marjoram, flor. lavand., sacchar. alb. āā 3j; flor. convallar. majal., sapon. venet. exsiccāt. āā 3ss; ol. caryophyl., ol. bergam. āā gtt. ij. M. f. pulvis. The sternutatory is intended for a double purpose; first, by means of the increased secretion from the Schneiderian membrane to effect a derivation from the Eustachian tube, and the ear in general; and secondly, to act as a direct stimulus upon this latter organ.

The next measure is to drop into the ear, morning and evening, a few drops of the following oleaginous preparation. R. ol. expres. amygd. 3j ol. camphorat. 3ss; fell. taur. inspiss. ℥j; ol. cajeput gtt. iv. M. The author is of opinion, that the employment of the ether as internal applications to the ear is attended with danger of inflammation. The oxgall which enters into the above prescription, is thought to have a specific effect in all diseases affecting this organ!

These views are obviously behind the intelligence and knowledge of the age; and it may be presumed that in adopting them, M. Hufeland is in many respects giving us the routine practice of the last half century, very slightly improved by his personal observation. A brighter day has dawned on the treatment of aural diseases since the publications of Deleau, Itard, and Kramer, and the latter particularly has shown up the vagueness and empiricism of German practice in his own time with the happiest effect. That a practitioner of the undoubted good sense of Hufeland, could adopt so many of these unfounded and antiquated notions, is only one of many proofs which are constantly meeting our view, that the judgment even of men of science is rarely exercised without some admixture of fancy or of prejudice.

E. G. D.

ART. XVII. *Essai sur la varicocèle et en particulier sur la cure radicale de cette affection.* Par H. LANDOUZY. Journal des Connaissances, Medico-Chirurgicale, Jan. et Mars, 1838.

DESPITE the number of persons who suffer from the disease treated of in the above essay, it is only within a few years past that it has been much noticed by the profession, and has not yet received from them that attention which it merits. Regarded as incurable, except by methods which endangered the parts affected, or indeed the life of the individual, but few ever looked beyond the giving of temporary relief to those suffering from it. This is the more singular when we consider the frequency of the disease, and the urgent demands often made by patients labouring under it for a radical cure. The essay of M. Landouzy is more complete than any which we have yet seen on the subject; and with the hope that it may prove interesting to our readers and serve to call the attention of surgeons more fully to the affection, we now offer to our readers the contents of his paper on this hitherto neglected subject, premising that the term varicocèle is used by him to designate enlargement of the veins of the spermatic cord as well as those of the scrotum.

In 27 observations in which the age of individuals affected with varicocèle was noted, 7 were between 9 and 15 years; 17, between 15 and 25; and 3, between 25 and 35. The disease, however, may show itself at any age, though it is ordinarily from 10 to 30 years that the first symptoms of it are observed.

The cause of the greater frequency of varicocèle on the left than on the right side of the body is explained by the anatomical disposition of the parts. On the right side the spermatic vein opens into the descending cava, in a direction almost parallel to the axis of this vessel, and consequently empties itself easily; while on the left side it gives into the emulgent vein at a right angle—a direction almost perpendicular to the returning venous current, thereby putting an obstacle to and impeding the circulation.

Some authors have attributed the more frequent occurrence of the disease on the left than on the right side, to the compression made upon the spermatic vessels of this side by the fecal matters accumulated in the iliac portion of the colon, but according to M. Landouzy this influence is not so great as is usually supposed, as on 17 patients whom he examined particularly in regard to this point, one only suffered from habitual constipation. The spermatic veins, too, are naturally larger and more tortuous on the left than on the opposite side. The left testicle is also larger, descends lower, and the column of blood contained in it is consequently longer and heavier than that of the right. Be the cause what it may, however, the fact is undeniable that the disease is generally found upon the left side, so generally, indeed, that in upwards of 100 cases seen by M. Breschet, but one only has been upon the right side. In addition to the causes above mentioned arising from the organization of the parts, there are other occasional causes which may be classed under two heads. The first acting by facilitating an afflux of blood towards the genital organs; the second by hindering its return towards the heart. In the first class of causes, our author places abuse of venereal pleasures, masturbation, and such passions as keep up a

constant state of genital excitement; riding, dancing, violent exercise on foot, and all such causes as tend to determine the blood to the lower parts. It is in this class too, that he ranges contusions of the scrotum, inflammation of the testicles, which by keeping up during a long time, irritation and an afflux of blood to the part may finish by increasing the size of the vessels or by rendering them more sensible to the causes of accidental dilatation. The causes of the second order are much more frequent, and embrace all those which place an obstacle to the return of the blood towards the heart. Tumours developed in the abdomen, hernias, enlargement of the glands in the groin, hydrocele, &c.

Hypochondriasis and melancholy have been given as causes of varicocele; but M. Landouzy thinks without reason, looking upon the state of dulness and misanthropy with which patients labouring under varicocele are often affected, as the consequence and not the cause of the affection.

In some cases varicocele appears to be hereditary: an instance is cited by M. Blandin, of three brothers who were all exempted from military duty on account of the existence of varicocele, the father of whom was likewise affected with it.

Although the causes enumerated as giving rise to varicocele, may appear numerous, yet they will be found all, at times, either to produce or increase it. Less astonishment at this will be excited, when the exceeding frequency of this affection is recollected; so frequent, that after the calculations of Prof. Marjolin, it appears that about 60 out of every 100 persons are afflicted with it in a greater or less degree.

Symptoms and Progress. The symptoms by which varicocele is most generally announced in its early stage, are a feeling of weight in the testicle, in the groin, or in the lumbar region, lengthening of the scrotum, a rapid increase in the volume of the testicles by heat or after long walks.

Once developed, the disease is known by a tumour, soft, fluctuating and knotty, reaching from the superior end of the testicle to the inguinal ring. When very large, the disease is not limited to the superior end of the testicle only, but occupies the whole of the left side of the scrotum, the subcutaneous veins in such cases becoming much increased in size.

Although as a general rule varicocele increases slowly, yet in certain cases its development and progress are exceedingly rapid, and give origin to violent symptoms. This is particularly the case when the affection follows an injury of the part. In illustration of this, M. Landouzy gives a case following severe contusion of the testicle, in which in the course of a very few months the disease had reached its highest point of development. Like instances are also to be found in some of our writers. Sir A. Cooper, reports a case following a bruise of the testicle, in which the progress was so rapid, that three years afterwards castration was resorted to on account of the great inconvenience experienced from it. Pott also mentions similar cases.

Treatment. The palliative treatment of varicocele consists in the wearing of an elastic suspensor and frequent cold bathing of the parts. This is all sufficient in light cases, but at times the progress of the disease is so rapid, and the sufferings of the patient so great as to demand a radical cure. According to our author, the best method of effecting this, is that proposed by M. Breschet. This consists in isolating the varicose vessels and making pressure upon them by means of a forceps with flattened blades which are worked by a screw. The pressure being sufficiently strong to destroy the life of the scrotum and vein, at the points to which it is applied, in a gradual manner, and thus cut off the circulation in the larger trunks. In most cases the instrument is removed on the 7th or 8th day. With this forceps, M. Breschet is said to have operated upon no less than 120 cases, a number of which are minutely detailed in the essay before us, without ever having once seen serious consequences result from it. The only instance we are aware of in which the forceps of M. Breschet was used in this city failed, so much pain being caused by it, that the patient insisted upon the removal of the instrument. Of the other modern means, however, which have been proposed for the radical cure of this affection, we have had some experience, and in no instance have unpleasant symptoms

arisen from them. In our opinion, the best of the means proposed is that of M. Davat, a method which has already been made known to the readers of this Journal. G. W. N.

ART. XVIII. *De l'Action des Alimens sur l'Economie Animale.* Par M. EDWARDS, Membre de l'Institut. Paris, 1838.

On the Action of Food on the Animal Economy. By M. EDWARDS.

THE human body is continually receiving, in order to repair its incessant losses, supplies of air, water, and solid aliment. The demand for the first being most urgent, the supply is the most constant; that for the second is scarce less so; and accordingly we find that water is furnished by nature in the most boundless profusion. Lastly, the demand for food, less clamorous, and made at longer intervals, lends itself more readily than either of the two others to artificial and conventional arrangements for its supply.

The correspondence between the waste and supply of the system, however, though constant, is not exact. In infancy, when an expansion and augmentation of all the parts is to be provided for, it is obvious that the supply must exceed the expenditure. A similar proportion holds in cases of recovery from disease. With the advance of age this difference diminishes, and when the growth is attained, the system requires no more than to replace the alimentary matter of which secretion and other vital processes have deprived it. As old age approaches the proportion is reversed; the body becomes emaciated, and the supply demanded being thus less than the amount parted with, is furnished by a proportionally less amount.

With both men and animals, the sense of the necessity of supply is instinctive. When liquid is furnished in too small proportion, they feel thirst; when solids, hunger. The immediate cause of these sensations is not perfectly known to us; although in regard to hunger it has been partially explained. The severest suffering is that from thirst; a circumstance which M. Edwards attempts to explain, not very successfully, it seems to us, by the stimulant character it imparts to the blood. When thirst exists to a great degree of intensity, it may bring on delirium or madness, which happens in men, and more frequently in dogs.

The privation of solid food produces a strong tendency to debility. In this case, too, the proportion of the constituents of the blood is altered, and the red globules exist in diminished quantity. Hence the human blood is made to approach in character that of the cold blooded animals, whereas in the reverse state, it bears an equal resemblance to that of birds.

The sensations of hunger and thirst, though dependent on the withdrawal of supplies, do not require for their relief, that the system should be renourished. It is sufficient that the liquid reach the stomach, that the solid have been swallowed, and the unpleasant sensation, except we think M. E. should have added in some anomalous cases of extreme exhaustion, vanishes. In proof that thirst may be in some cases a local affection, M. E. adduces the following case. A man is ascending a mountain in a dry atmosphere; he finds himself tormented with thirst, which drinking will scarcely assuage. Suddenly a vapour arises and he is relieved. We cannot see clearly, however, how the conclusion of M. E. results from his premises. The dry air is carrying off the fluid from every part of the surface, and the cause of the thirst acting generally, the effect must be equally general. The affection in question may differ from ordinary thirst by some peculiar impression made on the nervous system, but we see no sufficient reason to suppose that it is a mere local dryness of the throat and fauces.

The warning furnished by nature of the necessity of taking food, though generally, is not always precisely hunger. Some never feel this sensation in any proper sense. In such cases, however, some other instinctive sensation is substituted, by which the maintenance of the system is secured. We appre-

hend that M. E. might have pursued this branch of his subject, the connection between our propensities and certain ends to be answered in the economy, with advantage. Are the bowels costive? The food which presents itself as most grateful to the appetite, is precisely that which is calculated to have the effect of removing the accumulation. Is there diarrhoea? The articles, a free indulgence in which has produced the affection, cease to please; and a dry absorbent diet becomes the most grateful. Is there excess of acid? Those substances which from their complicated character are most disposed to ferment, the vegetables and pastry for example, become distasteful, and animal food plainly prepared is now the favoured aliment. We will not say that these indications are always so evident; but in occasional aberrations from a generally healthy state they are often a sufficient warning and guide. The indication, sometimes furnished by our sensations, of the necessity of depletion before an attack of apoplexy, though foreign to the subject of digestion, may be mentioned as another illustration of the same general law.

Food, in order to nourish the body, must fulfil two conditions. It must furnish to the system the materials necessary to its support; and 2dly, it must suit the nervous system. The last indication, with all deference to M. Edwards, is, we apprehend, rather vague. We like better the two conditions of some German physiologists, who hold, first, that food should have the necessary nutritive qualities; and 2dly, that it should be sufficiently stimulating to the stomach, to enable this organ to act upon it. It would require a strong effort of resolution even for a hungry man to dine on bread or boiled rice, and a gourmand would subsist on the hopes of doing better for some time at least, before making a meal on the honest Hibernian's favourite vegetable.

M. Edwards notices the antipathy felt by certain individuals against particular articles of diet which, to the generality of mankind, are agreeable and wholesome. It is worth remarking that this aversion is not always one of taste, for sometimes the article is agreeable to the palate; it is a warning, of the same kind as those already alluded to, of the deleterious qualities of the articles in question. These aversions are not always congenital. They occur in many instances from excessive indulgence. We have known an individual, who, having been once surfeited by lobster, could never be persuaded again to touch this shellfish. The same effect has sometimes been most fortunately produced by over-indulgence in spirituous liquor. Sometimes, however, these repugnances are not only congenital but hereditary.

There are other qualities which, though of less moment, are not without their importance. The food must be of agreeable odour, or no persuasion can induce the man of delicate stomach to taste it. It is true that habit will reconcile us to many things which at the outset are most repulsive. To most children the odour of wine is unpleasant, and to the untaught nostril the viand kept till its powers of adhesion will no longer maintain it on its hook is somewhat repulsive. But perseverance and philosophy will do much in time to overcome these prejudices.

The purpose of digestion is the conversion of food into the substance of the body. This process is called assimilation. Now there are two classes of compounds in nature which lend themselves to this process. The first are called ternary, the second, quaternary compounds. The first consist of oxygen, hydrogen, and carbon; the second, of these elements with the addition of azote. It is found, in comparing animal with vegetable substances, that the latter are, in most instances, ternary, and the former, quaternary combinations. The former rule is not, indeed, without its exceptions. But besides the elements just mentioned, many substances, both animal and vegetable, contain mineral ingredients, and these are principally the following; chlorine, phosphorus, soda, lime, sulphur, potass, silex, iron, and manganese; all these have their use in aiding the digestive process; not by the nutriment they contribute directly to the system, but by the stimulus which in their various combinations they are capable of imparting to the central organ of digestion.

The substances then which contribute to the great work of assimilation may be divided into two classes. The first, as containing mineral ingredients, may be termed mineralized, the others may be named organic substances. To begin

with the first. The mineral elements which enter into the composition of these are, as above stated, the following: 1. chlorine; 2. soda; 3. phosphorus; 4. lime; 5. sulphur; 6. potass; 7. iron; 8. silex; 9. manganese.

1. Chlorine is found both in the solid and fluid portions of the body. In its simple state it is said to be exhaled by the stomach during the process of digestion. But it is in its combination with hydrogen and soda, or as common salt, that this substance contributes to the assimilative process. It does this by arousing the dormant secretory organs, and inducing them to pour forth their peculiar fluids. It thus augments the faculty of producing these juices; it then furnishes itself as an ingredient in their composition; and lastly, it supplies muriatic acid, one of the principal agents in gastric digestion.

In its combination with soda as common salt, muriatic acid plays a most important part in the function of digestion. Fortunately there is no substance which nature has furnished in greater abundance. The sea presents an inexhaustible supply. It is found collected in springs and lakes, and even mines of unknown extent and depth have been worked from time immemorial for the sake of this precious condiment. Animal substances contain more salt than vegetable, with the exception of marine plants among the latter; and animals who live on grass often roam over long tracts of country, that they may gratify their longing for this necessary stimulant.

2. That soda, even in its uncombined state is essential to digestion, has been proved by direct experiment. The action of its compounds is more familiar. It is to the carbonate and bicarbonate of soda, that the celebrated waters of Vichy owe much of their efficacy in affections of the liver. Free soda has been found in the bile and likewise in the blood.

3. Phosphorus is an important principle in the animal economy. In the state of phosphoric acid and its salts, it is found in all the solids and fluids. Phosphoric acid is a constituent principle in the tissue of the nervous system and the brain, and the phosphate of lime, entering into the composition of the bones, imparts to them their solidity and power of resistance to external force.

4. The importance of lime as a constituent in the osseous system has been already alluded to in speaking of the acids with which it combines. The phosphate and carbonate of lime, combined with gelatine, constitute in fact the hard parts of all animals, but in different proportions; the phosphate predominates in the bones of the vertebrated, the carbonate in those of the invertebrated animals.

5. Sulphur enters into the sulphate of potass, and is an ordinary component of the living body.

6. Potass is found in all the solids and fluids, but in minute proportion.

7. Iron is the colouring principle of the blood.

8. Silex is found in the bones, to which it no doubt imparts solidity and strength.

M. E. now comes to the consideration of the organic elements, oxygen, hydrogen, carbon, and azote. These are furnished both by the food and by the atmosphere. In the atmosphere, the oxygen and azote are free; the hydrogen and carbon exist in a state of combination; the first in the form of vapour, the other in that of carbonic acid. Now, if the atmosphere could furnish, in a proper form, all the oxygen, hydrogen, carbon, and azote of the body, we might maintain ourselves on the one hand by respiration, on the other by taking for nourishment those constituent principles of the body, which are not found in the air. But substances containing these elements only, are confined exclusively to the mineral kingdom, and of course, they could neither be assimilated nor even digested.

Can any one of the constituent principles found in the air be wanting in an article of food, and yet the article in question be capable of supporting life?

1. Oxygen is absolutely indispensable as a constituent in articles of nutrition. In fact, there is no edible substance in which it is not present. It is remarkable that the most virulent poison in nature, prussic acid, contains not a particle of oxygen.

2, 3. Hydrogen and carbon both enter into all articles of food, and the latter into all drinks except water.

4. As respects azote, we find it less indispensable; for among the articles of

food employed by man, not a few, as above observed, are ternary compounds. But these are not furnished by nature. They are the product of art, and as such were unknown to man, till the progress of art demanded corresponding improvements in that science which has for its object the gratification of the palate.

To satisfy himself of the necessity of azote to the support of animal life, Magendie took a small adult dog, and put him on the use of sugar and distilled water. The seven or eight first days he continued lively and ate with avidity; the second week he began to fail, the appetite remaining good. The alvine excretions were small; the urinary, copious. The emaciation increased the third week with loss of strength. At this period, ulceration showed itself in the middle of the transparent cornea of one eye, then of the other; this increased till the coats of the eye were perforated, and the humour escaped. The same experiment was made with gum and olive oil. The result was similar, except that ulceration did not ensue.

Among the peculiar effects of a diet without azote, is the change which takes place in the character of the bile. It is found to contain a portion of picromel, the peculiar ingredient of oxbile, and in general of that of graminivorous animals. The urine presents all the characters of that of the herbivora, being sensibly alkaline instead of acid, and the excretions contain very little azote, compared with the usual proportion found in the egesta.

It is noticed by our author, that wheat-bread, which consists of fecula and gluten, is not sufficient of itself to maintain life. This fact he does not attempt to explain, but thinks that bran bread may furnish a permanent diet.

Magendie found that dogs fed with eggs were imperfectly nourished. This shows that pure albumen cannot supply the wants of the carnivorous animal. Swine have been fed with blood and died; hence fibrine alone cannot furnish a sufficient nourishment. Again; dogs have been fed with bread and pure gelatine; they died; hence gelatine is incapable of sustaining animal life. The reason is obvious. The mineral principles which have been mentioned as necessary stimuli to the secretions of the stomach, are not to be found in these substances.

Heat, observes M. Edwards, increases the nutritive power of many substances. Thus, many articles of food which are imperfectly digested in winter, become more amenable to the discipline of the stomach in spring, and in summer are readily assimilated.

The following propositions, which we give in full, terminate our author's speculations on this interesting subject.

1. We must carefully distinguish food from diet, which latter designates the totality of the nutritive articles that we habitually use; for it is evidently not necessary that an article of food should possess in itself all the essential qualities for maintaining life; but it is indispensable that all these qualities should be found united in the diet.

2. The diet should be so varied as to furnish all the constituent principles of the animal body in the quantity, proportion, and combination proper to sustain it; hence a variety of food is usually indispensable.

3. These constituent principles must be in such physical and chemical condition as duly to excite the nervous system, and to favour the action of digestion and assimilation.

4. Articles of food, as offered us by nature, often want some of the conditions necessary to render them appropriate for diet. This defect must be supplied by cookery, *one of the happiest inspirations of man.*

E. G. D.

ART. XIX. *Urinary Diseases and their Treatment.* By ROBERT WILLIS, M. D., Physician to the Royal Infirmary for Children, &c. London, 1838, 8vo., pp. 408.

From no class of diseases is more suffering experienced than from those affecting the urinary apparatus. Of extreme frequency, none, perhaps, are more

difficult of treatment, and yet none do we find less generally understood by the mass of practitioners. Within the past few years great accessions to our previous knowledge have been made in regard to these affections, by those engaged in their particular study. Their pathology has become better known and chemistry has supplied us with simple processes whereby the changes in the quality of the secretions from the urinary organs may be easily detected, at the same time that it has made known to us the proper means of correcting them. The results obtained, however, have remained scattered, and were without much avail to the physician placed beyond the reach of the more recent works of reference, and Dr. Willis merits our thanks for having given to us a well digested monograph on the functional derangements of these organs.

The work is divided into two parts. In the first "functional derangements of the kidneys and their immediate consequences" are treated of. In this is made known the symptoms of the different affections, their causes, prognosis, &c., as well as the proper methods of testing the different varieties of morbid urine and modes of treatment best adapted to each. The second part treats of "functional derangements of the organs which excrete the urine;" in which are given, successively, chapters on impediments to the discharge of urine, inability to retain the urine, irritability, spasm, and catarrh of the bladder. As being intimately connected with disordered states of the renal secretion, we have introduced into the first part of the work a chapter on stone in the kidney and bladder, in which, after speaking of the medical treatment of stone, the author goes on to treat of its solution by means of alkalies, injections into the bladder and galvanism. Dr. Willis ranges himself among those "who hope, who even of their own knowledge conclude, that the day will come when by the aids that science affords, urinary calculi will be familiarly destroyed in their seat," and details cases of cures produced by the use of the mineral springs of Vichy, or other alkaline waters, in the hands of MM. Robiquet and Petit in France, as well as by means of injections into the bladder by Sir B. Brodie in London. None of the instances cited by him are sufficient to carry conviction of the reality of the cures to our mind. That the sufferings of some patients affected with stone may be greatly mitigated by the use of alkaline remedies, or even in a few cases absolutely removed by them, none can doubt, but the idea that the day will ever arrive when calculi, generally, will be destroyed in the bladder by chemical agents, may, as it has been by Marcet, Brande, and Civiale, well be scouted at. In this same chapter, in which appear several remarks that we would rather had been omitted, we find lithotrity and lithotripsy spoken of in a manner which astonished us, as it will no doubt our readers. We can only account for the author's statements in regard to these great improvements in surgery, by remembering that he himself is no surgeon, that his work is given as a strictly medical work and that consequently any expressions of opinion which have escaped him on surgical points, have probably been received by him without minute examination of the proofs upon which they are based. "The latter operation, (lithotrity,) from which so much was anticipated at first, and which was so flattering to the timid, would not seem hitherto to have answered expectations. Whether it be that cases have been too indiscriminately submitted to treatment by its means, that the operation has been held applicable in too wide a range of circumstances, that its dangers are actually greater than they appear to be, or that it has hitherto been too much in the hands of men who were not physiologists and pathologists besides being handicraftsmen, it is quite certain that lithotrity or lithotripsy has, on the whole, proved even more fatal on the average than the old operation of lithotomy used to do." p. 345. And again, "lithotrity cannot boast of any thing even like this very moderate general success," (a mortality of one in eight.) "There have as yet been no Frère Jacques, and Cheseldens, and Martineaus, and Listons, and Dudleys among lithotritists. The deaths in the hands of the leading lithotritist of Europe, M. Civiale, are reported to be *at least* in the proportion of one in four. In all hands *the mortality from lithotrity has been that of pestilence, something like one in two.*" p. 347.

Barring this chapter on vesical calculi, we have derived both pleasure and profit from an examination of the work of Dr. Willis, and heartily recommend it to the attention of our readers as containing a great deal of valuable, well

arranged and, withal, practical information. "The entire subject," says the author in his preface, "I have handled less as a chemist and experimenter, than as a pathologist and practical physician; but I have still supplied the necessary instructions for testing each variety of morbid urine, and of each morbid product occurring in its constitution, the knowledge necessary for this purpose being among the number of accomplishments indispensable to whosoever would treat urinary diseases with discrimination and success."

G. W. N.

ART. XX. *Outlines of General Pathology*. By GEORGE FRECKLETON, M. D., Cantab. Fellow of the Royal College of Physicians. London, 1838, 12mo., pp, 267.

As a very concise and hasty outline of *a portion* of the science of general pathology, the work of Dr. Freckleton will be found a useful guide to the student and young practitioner. It is very far, however, from presenting a complete outline of general pathology. The first seventy-five pages are taken up with observations on disease, its seat, causes, division, and mode of attack; while the rest of the volume, with the exception of the last twenty-seven pages, in which are considered the progress, duration, course, and termination of diseases, their diagnosis, prognosis, and treatment, is devoted to the symptoms of disease, as observed at the bed-side of the sick. Hence the work might have been, with greater propriety, entitled "*Outlines of Symptomatology*," than "*Outlines of General Pathology*." The condition of the several tissues and organs in disease and the symptoms with which the several changes from their normal state are usually associated are passed over as though they formed no part of general pathology. In treating of the symptoms, the observations of the author refer more especially to their connection with the groups of morbid phenomena, constituting the diseases of the nosologists, than as the indications of the morbid actions and changes occurring in one or more of the tissues and organs.

The subjects embraced in the volume before us are, in general, treated of with sufficient accuracy. From the author's views, however, of functional disease as existing entirely independent of any change in the organs, we dissent, although we grant that in many cases the change in the condition of the organs giving rise to disturbance of their functions is inappreciable to our senses, and that what the English pathologists generally understand by the term "organic change," is, in the majority of cases, rather the effect than the cause of disease. But we cannot understand how the functions of an organ can be in any degree disturbed and the organ itself be unchanged from its normal condition.

The remarks of the author upon contagion are unsatisfactory; some of the statements adduced by him as facts are of doubtful authority, and his reasoning is altogether inconclusive. His observations, however, upon the leading symptoms of disease, though concise, are, in general, correct; hence as an outline of semeiology we recommend the work of Dr. Freckleton to the notice of our readers.

D. F. C.

ART. XXI. *Introductory Address, delivered at the opening of the session of the Medical College of Georgia, on the second Monday of November, 1838*. By JOSEPH A. EVE, M. D., Professor of Therapeutics and Materia Medica. Published by the class. Augusta, 1838, pp. 24, 8vo.

Medical Education. An Address delivered before the Medical Society of Tennessee, at its annual meeting, at Nashville, on the 7th May, 1838. By LUNSFORD P. YANDELL, M. D. Published at the request of the Society, pp. 20. 8vo.

THESE are appropriate and excellent discourses: rather ambitious, in parts, in their style—but in the main, free from this common fault of similar productions in this country.

Professor Eve's address is devoted to the inculcation of the importance of ap-

plying the inductive philosophy to the study and cultivation of medicine. The following extract, presents sound views, neatly expressed, and may be quoted as a specimen of the author's best manner.

"The introduction of the inductive philosophy into the study of medicine has by degrees led medical philosophers to consider the subjects of their investigation, in the light of physical sciences, capable of being studied as such: and the application of the principles of physical science to these subjects has proved, most satisfactorily, that this is the only correct and successful mode of studying them. It has, by suggesting the value of the employment of the senses in physical research, led to their application to the investigation of disease; and the consequence has been most happy. It has clearly demonstrated that a vast amount of the most exact and valuable knowledge, in pathology, lay concealed from physicians, until brought to light by this method of investigation.

"The employment of the sense of hearing, until very recently, was restricted almost entirely to the patient's own account of his sufferings, or the still more fallacious narrations of friends and attendants; but since the days of Laennec, this sense, by means of auscultation, mediate and immediate, and percussion, is employed in exploring the physical condition of organs, in the hidden cavities, farthest removed from observation, and reveals information which enables us to decide the diagnosis of many diseases, with an accuracy unattained and un hoped for before;—the certainty already arrived at, by the employment of the physical means of diagnosis, in thoracic diseases, cannot be regarded otherwise, than as one of the most splendid triumphs and valuable attainments of this inductive philosophy, teaching physicians to seize with avidity every thing connected with the subjects of their investigation, to improve every opportunity and try every method, in their power, of acquiring all the discoverable circumstances in every subject.

"The sense of touch, formerly employed for scarcely any other purpose than to ascertain the pulse and the temperature of the surface, is now much more extensively used, in the exploration of disease and examination of patients.

"Means have been invented, such as the speculum, &c., to extend the useful application of vision; and the other senses have all been brought into the same strict and beneficial requisition.

"The inductive philosophy is emphatically the philosophy of *facts*; but whilst it teaches their primary and paramount importance and declares that observation and experiment alone can furnish them, it instructs us that, to render *facts*, when thus obtained, valuable and available to science, they must be brought together, compared and classified for the deduction of *principles*; which method of deriving general principles from particular facts, generalization, is one of the highest and noblest exercises of the human intellect, and the talent for it most characteristic of genius. Bichat possessed this faculty in an eminent degree; hence his conclusions are so exact, so beautifully true to nature, that they must ever stand as irrefutable axioms in medical science, and his doctrine of the tissues, deduced from his observations and experiments, is justly regarded as a revelation in medicine. But great caution is necessary in the exercise of this talent—for equal evil has resulted from the error of generalizing, as of particularizing too much—errors into which our profession have too frequently fallen.

"Whilst in accordance with the dictates of this philosophy, I would endeavour to impress upon your minds the futility of theories not based upon facts, and the necessity of regarding the truths of nature as the foundation of knowledge, I would, with equal solicitude and earnestness, warn you against the danger of false facts and the fallacy of experience, as lamentable in the present day, as when first declared by the venerable sage of Cos.

"Medicine has always abounded in false facts, which Cullen has correctly said are more numerous than false theories. False facts, or errors in experience, result from superficial, careless, or partial observation and unfair experiment: men are wont too often to see every thing through the distorting medium of prejudice, and to admit nothing that contradicts their preconceived notions, or proudly cherished opinions: many err from want of opportunity, or disposi-

tion, to compare their own experience with that of others: many errors have arisen from mistaking the relation of cause and effect: there is no more frequent mistake than that of taking simple antecedence for cause: when one event follows another, a careless observer is almost sure to regard them in the relation of effect and cause, although there may not have been the slightest connection between them; hence the necessity of the most attentive and candid observation, and the greatest care and caution in our experiments. From the want of due attention, cause is often mistaken for effect and the latter for the former—from the same defect, partial and erroneous conclusions are adopted;—all the causes that co-operate in the production of a result are not carefully scanned;—the succession or concatenated series of causes that conduce to the same end is seldom traced with sufficient attention and labour: What more cogent and conclusive evidence can be required to prove the fallaciousness of experience, than the constant reference that is made to it, as an infallible proof of the success of the most opposite and incongruous modes of practice? To prevent error and obviate danger, the most rigid principles of a sound and discriminating philosophy are continually required."

Dr. Yandell, gives a very brief retrospect of the history of medicine, and concludes with the following remarks:

"The first generation of physicians in Tennessee has passed away; and we stand here their successors and representatives. They spent their days in the discharge of labours 'huge and hard'—labours which demanded great bodily strength, industry and courage—exposed to cold in their long, lonely rides—compelled to ford dangerous streams—pursuing their way along blind uncertain paths—encountering hardships and privations to which these luxurious days afford no parallel. Amid such lives of toil, there could be but little leisure for study. Few books were reprinted in America, and few could be commanded. Those men had small advantages of professional intercourse. Schools of medicine were remote, and the expense of visiting them beyond the ability of most practitioners—and above all, they were without the advantages of the periodical press. These difficulties have passed away with the generation of men who lived in the midst of them. And with all the augmented means and facilities which we enjoy—with Macadamised roads, and the power of steam to hasten our travel—pursuing our professions in crowded, cultivated cities, or in thickly settled neighbourhoods; and with increased leisure thus for study—brought into contact with all parts of the country, and light from the farthest east flying to the remotest west with more than the speed of the revolving seasons—the discoveries at Paris or Vienna transmitted to Philadelphia, and from Philadelphia to Louisville or St. Louis, as if by telegraphic agency—with these enlarged efficiencies, shall we be accounted to have discharged the whole amount of our duty to our profession, if we pursue them with no more than the ardour and success of our fore-fathers? Nay! with the multiplication of means, has come a heavier weight of responsibility. We are invoked by the laborious example of our predecessors—by the clamorous wants and imperfections of the Healing art—by the complicated sufferings of our fellow-men—by the efforts of the profession in other lands—by our pride of State, and pride of profession, to transmit the science of medicine to our successors enriched by our labours."

ART. XXII. *Di una Straña Mallattia Nervosa guarita con L'agopuntura*. Memoria letta all'ateno di Venezia dal Socio ordinario GIACINTO DR. NAMIAS. 4to. 12 pp. Padova 1837.

Description of a singular case of nervous disease cured by acupuncture. Read to the Athenæum of Venice, by DR. GIACINTO NAMIAS.

THE disease described in the pamphlet before us, occurred in a young girl of a fine form and good complexion, and endowed with great sensibility. Her menses had appeared at the usual age, and subsequently recurred at regular periods, and she had not experienced any disease with the exception of some

slight and transitory disturbance of the nervous system, until the year 1834, when she suffered from an anginose affection followed by aphonia and violent cough evidently of a nervous character. From these symptoms she appears to have perfectly recovered; but in the commencement of the subsequent year, was again attacked, and on the cessation of the anginose symptoms there remained a very peculiar cough, consisting of a series of noisy expirations similar to the angry barking of a dog—which could be heard at a considerable distance. The accession of coughing continued with great violence and the utmost agitation of the whole frame from two to eight minutes, and was repeated at short but irregular intervals. Although the patient was greatly exhausted after these accessions yet the digestive and nutritive functions, the secretions and excretions, the pulse, respiration and sleep appeared to be in no degree disturbed.

The attacks of coughing were preceded generally by a sense of uneasiness at the præcordia, which sensation was also sometimes experienced in the intervals of the cough. The accessions were invariably attended by an almost complete extinction of the voice. The patient was able to articulate freely but in so low a tone as to render it necessary, in order to hear her, to approach the ear very near to her mouth. Although in ordinary conversation the tone of the voice was thus deficient yet the patient could sing with clearness and declaim with a distinct utterance; thus she was able, as it were, by an extraordinary effort, to surmount the obstacle which prevented ordinarily the formation of the voice.

Although the accessions of convulsive cough and aphonia often occurred without any evident exciting cause, they were produced also by the slightest excitement of the mind, some particular odour, and even by some particular article of diet. A variety of remedies were resorted to, without any or with only temporary benefit—as hyoscyamus, oxide of zinc, valerian, belladonna, aqua lauro-cerasus, hydrocyanic acid, emetics, purgatives, diluents, opiates, assafœtida, the tepid bath, leeches and blisters, &c.; the particular manner or length of time these remedies were administered is not, however, very clearly stated. Finally a resort was had to acupuncture. Twelve needles were at first introduced on the anterior and superior parts of the neck about the organs of voice; others were introduced at the same time at the scrobiculus cordis, subsequently, after the lapse of some days, twelve to fourteen needles were introduced on each side the spinous processes of the last cervical and first dorsal vertebræ. Under this plan of treatment the patient rapidly recovered and was, we are led to infer, at the period when the description of her case was published, entirely free from disease.

D. F. C.

ART. XXIII. *Elements of Medical Jurisprudence* By THEODORE ROMEYN BECK, M. D. Professor of Materia Medica, and Medical Jurisprudence, in the College of Physicians and Surgeons of the Western District of New York, &c. &c., and JOHN B. BECK, Professor of Materia Medica and Medical Jurisprudence, in the College of Physicians and Surgeons, New York, &c. &c. Sixth edition, 2 vols. 8vo. pp. 670 and 743. Philadelphia: Thomas, Cowperthwait & Co. 1838.

We have already (vol. XVII. p. 460) expressed the very favourable opinion we entertain of this work and we take great pleasure in reiterating that sentiment, a judgment which the public have fully confirmed as is evinced by the short period that has elapsed between the appearance of the preceding and present edition.

This last has been carefully revised and amended and contains many important additions, particularly in the part relating to persons found dead; and it may be regarded as exhibiting a complete summary of the existing state of the science of Legal Medicine.

This work is indicative not only of great research and industry on the part of the authors but also of the rarer merit of judgment in the selection of materials and skill in digesting them into a harmonious whole.

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

GENERAL ANATOMY AND PHYSIOLOGY.

1. *Structure of the Retina.*—*Müllers Jahresbericht* for 1837 contains an interesting account of the recent investigations of some German Anatomists, relative to the structure of the retina. The details we may give hereafter—the results, which we copy from the *London Med. Gaz.*, July 7, 1838, are all we have space for at present.

“It may be considered as proved by these investigations, that the retina, which has very generally been regarded as merely a single expansion, or melting out of the optic nerve, is formed of several distinct layers. That, immediately subjacent to the membrana Jacobi, there is a pulpy soft matter, which hardens in alcohol, &c., and may then be removed in small scales; that next internally to this there is a dense firm membrane, which has a granular aspect on both surfaces, and supports the nervous fasciculi and filaments of the divided optic nerve, which lie beneath it, radiating from the nerve as a centre, and covering the whole vitreous humour as if by an equable expansion; and that immediately beneath the radiating filaments of the nerve, the vessels are distributed in a venous and an arterial network, forming a single vascular layer. Through the meshes of these networks, each ultimate fibril, having turned inwards, passes, receiving from them a simple sheath, or having a more or less perfect papilla formed at its base. Thus curved, they project towards the anterior part of the eye, being arranged so densely, that when viewed in front they present a perfectly smooth and even surface, of the same kind as, but much more fine and delicate than, that of velvet. Thus the retina receives impressions as other nerves are supposed to do, on the extremities of ultimate nervous fibrils, and presents that most admirable opportunity of observing their mode of termination, which it is probable that future investigations will prove to be the same in all parts of the body.”

2. *On the Functions of the Rete Mucosum and Pigmentum Nigrum in the Negro.*—Mr. R. M. GLOVER read a paper on this subject to the Medical Section of the British Association at their last meeting. The paper commenced by stating, that the degree of developement of the rete mucosum and its pigment determined the power of resisting the excessive heat of the sun in tropical climates, as evinced by the Negro, (the type, in this respect, of the dark races,) the European, and the Albino. The *modus operandi* must be discovered by an attention to both the physical and vital properties of this peculiar organization. The doctrine at present taught on the subject is, that the black skin absorbs more heat, but that the cutis vera of the negro is not so liable to inflammation from a high temperature, as that of a European from a lower temperature; and, as the radiation of caloric from black must be greater than from white skins, the pos-

possession of the former must cool more readily, and enjoy greater alternations of heat and cold. The former part of this doctrine is founded on the experiments and deductions of Sir Everard Home, as detailed in his paper in the Philosophical Transactions. A number of experiments detailed in the paper on the vesicatory powers of differently coloured substances, under the concentrated rays of the sun, contradicted the deductions of Sir E. Home; and hence arose the necessity of looking to the vital properties of the skin of the negro, and the mode in which it is likely to be affected by the radiating and absorbing power of the pigment with which he is provided. Blumenbach and Winterbottom state, that the negro perspires more readily and freely than the European; and Davy says, "In the inhabitants of the tropics, the exhalent arteries of the skin seem unusually expanded, and the whole apparatus peculiar to this secretion unusually developed; and I believe that the blood itself is less viscid, more fluid, and flows more readily through the vessels, so as to promote perspiration, and by that means contributing to the cooling of the surface. And being cooled itself, it contributes again, when it flows back upon the heart, to the reduction of the temperature of the internal parts." Were the inhabitant of the tropics not possessed of this peculiar organization, his system could not respond to the stimulus of heat, by a determination of fluid towards the surface. Doubtless, the excessive absorption of heat by his skin, is useful in promoting this effect; but in the system qualified to respond to the stimulus of heat, and not in the organization of the skin alone, must an explanation be sought of the capability of the negro to withstand the heat of tropical regions.—*Athenæum*.

3. *Experimental Investigation of the Functions of the eight pair of Nerves*.—Dr. JOHN REID communicated to the Medical Section of the British Association the principal results which he has obtained in prosecuting this inquiry since the last meeting of the association. Dr. Reid chiefly confined himself to the Pulmonary and Gastric branches of the Nervus Vagus. In a great number of experiments upon dogs, in which the nervi vagi and recurrens were divided, Dr. Reid satisfied himself that, when a sufficient quantity of air reached the lungs, the respirations were at first performed with ease. The only immediate and constant effect observed, was a great diminution in the number of the respiratory movements, which at the same time became slower and more heaving. When the number of respirations were from sixteen to twenty in a minute, they, in general, instantly fell to from six to eight. In one animal, in which they were from twenty-four to twenty-eight, they immediately fell to fourteen; and, in another animal, in which they were twenty-four, they fell to eight. At a longer or shorter period after section of the nerves, the inspirations became more prolonged and heaving, while the expirations continued to be comparatively short and rapid, and attended by a sound caused by the sudden expulsion of the air. After a time, the inspirations become more heaving and prolonged, the blood is less perfectly arterialized in the lungs, and the arteries circulate blood gradually approaching the venous character; the animal becomes dull and stupid, and dies asphyxiated. In tracing the morbid changes upon the lungs, which follow section of the vagi, Dr. Reid has satisfied himself, from the dissection of animals killed at various periods after section of the vagi, that the bloodvessels of the lungs become gradually loaded with blood, and that this, in a few cases, is the only change which can be observed after death. More frequently, however, this congestion of the lungs gives rise to effusion of serum, which in the bronchial tubes, is rendered frothy by the passage of air through it; to condensation of portions of the lung without any apparent effusion of lymph; and more rarely to true pneumonia. The respiratory murmur is little, if at all, changed for a short time, but it afterwards becomes bronchial; and when the effusion of serum takes place, the true *râle crepitant* may be heard. It appears, however, that these morbid changes in the lungs do not necessarily take place after section of both vagi and recurrens. In a dog, which was killed in the presence of Dr. Allison, twelve days after section of the vagi and recurrens, and which had apparently recovered from the effects of the operation, the lungs were found perfectly healthy, though the cut ends of both vagi were rather more than one

inch distant from each other. Dr. Reid believes that the diminished frequency of the respiratory movements is sufficient to explain all the morbid changes in the lungs, which result from section of the nervi vagi. He related several experiments to prove that the respiratory movements are not arrested by division of the vagi and recurrens after removal of the cerebrum and cerebellum. In these experiments, it was, however, observed, that though section of the vagi did not arrest the respiratory muscular movements, they were much diminished in frequency. While these experiments illustrate the great importance of the par vagum as exciters of respiration, they also prove that there are other nerves which can transmit those impressions to the medulla oblongata, which excite the respiratory movements; and Dr. Reid adduced some facts to show, that one of the most important of these was the larger root of the fifth pair distributed upon the face. Dr. Reid then related four experiments, which he considered to afford satisfactory evidences of the continuance of digestion after section of both vagi, with loss of substance. In three of these, the lacteals and thoracic duct were found full of chyle. From these experiments, he concluded, that, though by division of the vagi a deleterious influence is propagated downward to the stomach, disturbing the functions of the digestive organs; yet, if the animal live long enough, this goes off, and digestion proceeds as before. He related some experiments to prove, that alcohol, opium, and prussic acid exert their deleterious effects as rapidly when injected into the stomach after division of the vagi, as when these nerves are left entire. He then detailed the result of five comparative experiments upon the effects of fatal doses of arsenic upon the watery and mucous secretions from the inner surface of the stomach and intestines. These results were completely at variance with the statement of Sir B. Brodie, that section of the vagi arrests the usual mucous and watery secretions of the stomach and intestines observed after poisoning with arsenic. He stated, that he had of late carefully watched the effects of division of the sympathetic nerve on the eye, and that he had satisfied himself that the contracted state of the pupil, and the partially-closed eyelids, which accompany the inflammation of the conjunctiva, consequent upon section of the sympathetic, take place previously to the inflammation of the conjunctiva, and are independent of it.

Prof. Owen requested to know, if albumen were discovered in the thoracic duct after the division of the vagi nerves. Dr. Reid replied, that no chemical analysis was made of the contents, but true digestion was inferred by him from the return of health and activity to the animal operated on.—Dr. Golding Bird pressed the same objection as Professor Owen, and wished that an experiment on the subject should be followed up by such a chemical investigation as would be decisive.—*Ibid.*

4. *On the Origin and Subsequent Development of the Human Teeth.*—Dr. GOODSIR has observed dentition commence by the formation of what he denominates the primitive dental groove, on the floor of which the rudiments of the pulps of the milk teeth appear as globular or conical papillæ; septa afterwards pass from the outer to the inner side of the groove, between the papillæ, and thus each of the latter becomes situated in an open mouthed follicle, which is the primitive condition of the future sac. After the formation of the milk follicles, the lips of the groove still remain prominent; and when in this condition he denominates it the secondary groove. The rudiments of the ten anterior permanent teeth appear as little depressions in the secondary groove, internal to the mouths of the milk follicles. The papillæ of the milk teeth now begin to be moulded into the form of pulps, a change which is synchronous with the closure of the mouths of the follicles by two or more laminæ, which agree in number, shape, and position with the cutting edges and tubercles of the future teeth. The lips and walls of the secondary groove now adhere, except in the situations of the ten depressions for the permanent teeth, and for a small extent posteriorly on each side, where a portion of the primitive dental groove remains in its original condition. In this portion the papillæ and follicle of the first large molar tooth appear, and, after it closes over, the lips of the secondary groove above it adhere, but not the walls; so that there is in this situation a

cavity which produces the sacs of the two posterior permanent molars. The first large grinder may, therefore, be considered in some measure a milk tooth. The author observes, that dentition begins, and is always in advance, in the upper jaw, except in the case of the incisive teeth, which, although they appear first, are later in coming to perfection. This he explains by the tardy development of the lateral elements of the intermaxillary system. The author divides dentition into three stages. The first is one with which anatomists have hitherto been unacquainted,—viz. the follicular. The second and third they are familiar with—the saccular and the eruptive. From his researches, he concludes that the human teeth originate from mucous membrane; that the permanent teeth have no connection with the deciduous set, and that the sac and pulps must be referred to the class of organs denominated bulbs. He anticipates the discovery of the follicular stage in the dentition of all animals, and if so, that it will explain the varying and complicated forms of the pulp and sacs.—*Ibid.*

5. *Experiments and Observations on the Cause of the Sounds of Respiration.*—Dr. SPITTAL, in a communication to the Medical Section of the British Association, has endeavoured to show, that the theory of Laennec, in regard to the cause of the respiratory sounds—viz. that all those known by the terms vesicular, bronchial, tracheal, as well as cavernous and amphoric respiratory murmurs, are caused by the friction of the air against the parietes of the air-cells, bronchial tubes, trachea, and of cavities of different dimensions, has never been proved; and that the few experiments which have been advanced in support of it, are far from establishing the conclusions which have been deduced from them; and that it is highly probable that, according to the theory of M. Beau,* these sounds either owe their existence to, or are in part produced or modified by, the transmission or reverberation of a sound which takes place in the superior respiratory passages, and which has been termed by M. Beau, the “guttural” respiratory sound. In support of the first theory, it was observed, that the best and almost the only experiment was that of Magendie, in which air was blown into the lungs by means of a pair of bellows, and in which sounds, resembling the respiratory murmur, were perceived, and from which M. Magendie drew the conclusion, that because air passed to and from the lungs during this experiment, as well as during respiration, therefore, the respiratory sounds are produced by the friction of the air against the parietes of the bronchial tubes and air-cells of the lungs. It was stated that the similarity between the sound produced by a pair of bellows, and the guttural sound was admitted by Laennec; and that it was also observed that a similar sound could be produced by blowing air through almost any tube; differing in tone and degree, according to the diameter or shape of the opening in the tube—the force with which the air is made to issue from it—or the nature of the materials of which it is composed. The experiments of M. Beau, in support of his particular theory, it was noticed, were open to objections, and did not seem to bear out very clearly the conclusions at which he arrives; which may perhaps account for the neglect his view of the subject has met with. For the purpose of obviating these, and showing in a more distinct manner the probable truth of this theory, to a certain extent at least, several experiments were devised, calculated to prove this in a less objectionable manner. In these experiments no stream of air was allowed to pass through those parts the subject of observation, which were only allowed to become, and remained distended, with air; while, at the same time, the sound produced by the issuing of the air from an air-condensing apparatus, or from the mouth,—and which very nearly resembled that of the bellows, which again resembles the guttural sound—was observed to have passed freely, in one experiment, nearly, if not quite, as loud in this as in another artery connected with it, and through which a current of air passed. In another experiment, in which the lungs of a lamb were used, sounds analogous to the tracheal, bronchial, and vesicular, respiratory murmurs were distinctly perceived, although no current of

* Archives Générales, Paris, 1834.

air passed along the air tubes or cells; and in the case of a bladder, attached to one of the great bifurcations of the trachea, a sound louder than that in the bronchial tubes was perceived, when the former was contracted to about an inch and a half or two inches in diameter; feebler when larger; and assuming, as its size was increased, a gentle, shrill, ringing, amphoric character. In these different observations, no current of air passed along the parts the subject of examination, but was conveyed away in a manner which our space will not permit us to describe. These experiments were not advanced to prove that the guttural sound, or that which takes place in the superior respiratory passages, is the only source of the respiratory murmurs; but to show that in all probability it exerts a considerable influence, if not in producing, at least in modifying, the different respiratory sounds, known as the vesicular, bronchial, tracheal, cavernous, and amphoric respiratory murmurs, all of which have hitherto been explained according to the views of Laennec.—*Ibid.*

6. *Cases in which the ability to distinguish Colours was Defective.*—Dr. ELLIOTSON laid before the Phrenological Society of London, at a recent meeting, an account of two gentlemen in whom the power of distinguishing colours was defective, and at the same time presented masks of them. He stated that Gall pointed out that some persons are incapable of distinguishing a marked difference between two colours.

Dr. Elliotson mentioned that the inability to distinguish certain colours was very common, was frequently hereditary, and occurred much more frequently in males than in females. Dr. Nicholl, in the "*Medico-Chirurgical Transactions*," vol. vii, describes a boy who confounded green with red, and called light green and pink, blue. His maternal grandfather and one uncle had the same imperfection. This uncle was in the Navy, and having a blue uniform coat and waistcoat, purchased a pair of red breeches to match. Dr. Nicholl mentions a gentleman who could not distinguish green from red; grass in full verdure always appeared to him what others called red; and ripe fruit on the trees he could not distinguish from the leaves. A cucumber and a boiled lobster were the same colour in his sight, and a leek resembled a stick of sealing-wax. This person had a brother and a niece, the daughter of another brother, in a similar predicament (*L. C.*, vol. ix.) A similar case is mentioned by Dr. Priestley, in the "*Philosophical Transactions*" for 1777, and the man had two brothers with the same defect. In the volume for 1778, a similar case is described, in which the gentleman's father, maternal uncle, one sister, and two of her sons, were similarly circumstanced. He mistook pink for pale blue, and full red for full green; all kinds of yellow and blue, except sky-blue, he could distinguish with great nicety. Mr. Combe mentions three brothers and a cousin who inherited the defect from the maternal grandfather, the intervening generation not having it. Professor Dugald Stewart could not perceive any difference in the colour of the scarlet fruit of the Siberian crab and that of its leaves. Sir D. Brewster examined a gentleman who saw only two colours in the spectrum, viz., yellow and blue; when the middle of the red space was absorbed by a blue glass, he saw the black space with what he called the yellow on each side. Dr. Dalton was unable to distinguish blue from pink by daylight, and in the solar spectrum the red was scarcely visible to him. Mr. Troughton had the same defect, and was capable of fully appreciating only blue and yellow colours, and when he names colours, the names of blue and yellow correspond to the more or less refrangible rays, all those which belong to the former exciting the sensation of blueness, and those which belong to the latter the sensation of yellowness, as I find in Sir David Brewster's "*Treatise on Optics*." This author mentions also a shoemaker at Allenby who was unable from his infancy to distinguish the cherries of a cherry-tree in so far as their colour was concerned. Two of his brothers always mistook orange for grass-green, and light-green for yellow. Hains himself could only distinguish black and white. A tailor at Plymouth regarded the solar spectrum as consisting of only yellow and light. We learn from these cases, said Dr. E., not only that the deficiency may be hereditary, and in all probability occurs most frequently in males, but that the

defect relates most frequently to only one of these primitive colours, and that that one is the red. He then read an account drawn up by two young gentlemen of University College, London, who were deficient in their sense of colour. The first has the ordinary deficiency of insensibility to one colour only, and that colour is red. The other has the rare deficiency of being insensible to two of the primitive colours, so that every thing appears to him as of one colour, and it is not known to which two of the three primitive colours he is insensible.

Dr. Elliotson read the following account written by the gentleman deficient in the red ray:—"The only colours I can recognise with certainty are blue and yellow. The rainbow and prismatic spectrum appear to me to be composed of only two colours, which seem to become gradually intermixed in the centre, and to subside towards the margins. I have not ascertained whether I see the whole breadth of the spectrum, the other colour appearing as blue or yellow, or whether I do not perceive some of them at all. If two colours are placed close together with a well marked line of demarcation between them, I readily perceive that they are not similar, and I believe that it is in consequence of those of the rainbow and spectrum passing in some measure into each other, instead of terminating abruptly by a defined line, that I cannot observe the difference between them; for if I see the prismatic colours painted on paper their dissimilarity is quite evident, although I cannot say, excepting the blue and yellow, what colours they are. I perceive the slightest difference in shade, but in some instances two different colours, several of the shades of red and green, for example, appear to me to be only different shades of the same colour; and, on the other hand, what is only another shade, sometimes appears of a different colour. I have frequently observed that on adding water to tincture of cardamoms, which at first looks red, after the dilution has reached to a certain point the fluid appears to me to change suddenly to blue. I experience greater difficulty in distinguishing very light and very dark shades of colour, the former appearing colourless, the latter black. Transparent substances I distinguish with greater difficulty than opaque. I never could observe any change of colour in the human countenance when viewed by means of the monochromatic light given out during the combustion of alcohol with salt. Blue and yellow, I can always recognise; I never confound these with other colours, and I can discern these when the object is at a distance, or if very minute, as a narrow line or small spot; this I can do with no other colour. The only red colours I can recognise with certainty are bright scarlet and crimson; but the former of these I do not know from grass-green unless the two colours are placed side by side. I have often seen a field completely covered with the blossoms of the common poppy, *papaver rhœas*, but never could observe any difference between it and one covered with grass, unless I approached it sufficiently near to observe the individual flowers. Pink or rose, for instance, appears to me blue by day and red by candle-light. Purple looks like dark blue. Many of the shades of red, green, and brown I cannot distinguish from each other. I never could observe the beautiful shades of colour which foliage assumes in autumn, and which I hear so much admired. The only changes I perceive are that some leaves become yellow, and the colour of the remainder less vivid than in summer. Brown appears to me not to be a colour but only a shade, and I imagine that if made very deep it would be identical with black."

The following is the account of the gentleman who is deficient in discerning two primitive colors, but it is not known which of the three these are:—"I can see a difference in colours placed side by side, but cannot state with any degree of accuracy the names of them individually. I would not swear to any colour, but can often guess pretty accurately the colours of many articles, by considering the purposes for which the colours are frequently used; for example, I know grass is green, but if the same colour were shown me in a different form, I, perhaps, should not recognise it as the same. Again, I know gold is yellow, and silver white. I can immediately distinguish, at some distance, a sovereign from a shilling, not by its difference in colour, for that I never think of in forming a judgment, but by their general appearance. I cannot tell a gold from a silver watch by its colour, but if I take it in my hand, I soon can tell the differ-

ence by its weight. I am frequently asked the colour of a window-curtain, and I sometimes guess right, more frequently wrong. I know that curtains are generally either blue, red, or green, and I turn it over in my mind which of the three I think most like. What first called my attention to it was, when at school I was for a short time in the habit of drawing and painting maps; for this I purchased a box of colours; after a time the names were rubbed off; then I could no longer distinguish them, so I was obliged to part with them, as they were useless to me. When in mourning for my father I bought a green coat of a dark colour, and was not aware of my mistake until a friend asked me how long I had left off mourning. I was for several years exceedingly puzzled with the rainbow, which I had heard every body speak of as being so very beautiful; it always appeared to me as a band of a lighter colour than the other part of the sky, but a little darker at one side than the other, and gradually shaded off between the two sides; but this was fully explained when I looked through a prism, which gave me exactly the same appearance, with the exception that I thought I saw through the misty shading an appearance of two or three indistinct colours.

"I have written this as correctly as I can, but cannot state particulars more minutely with any degree of certainty, on account of the difficulty I find in ascertaining my own deficiencies, from not being certain of any colour."

The casts of these gentlemen were then exhibited, and the deficiency in the situation of the organ of colour was very striking. The author took occasion to point out the importance of phrenology not only in determining the faculties of the mind, but in referring various phenomena to their true causes. Without an examination of the development of the brain at a particular spot, in persons remarkable for their acuteness or deficiency of judgment of colours, this would not be ascribed to its true cause, and the most singular explanation would be given of its deficiency; for example, Professor Dugald Stewart ascribes it to a defect in the power of conception, and this as resulting probably from some early habit of inattention. But what particular attention do children who distinguish colors accurately bestow? They distinguish without effort, and those who cannot are not only not proved to have been inattentive, but have most probably been often extraordinarily attentive, in the hope of seeing what others can see. How should want of attention to this one point be hereditary in families, passing through a generation, &c.? This is a specimen of the errors of metaphysicians; they see and generally acknowledge that the brain is the organ of the mind, yet they observe the faculties of the mind without even once considering the organ which possesses, or is employed, in the working of these faculties. Gall examined the two together, and we now know, through him, that local deficiency of brain both exists where the faculty of distinguishing colors is deficient and is hereditary; with this deficiency Dr. Dalton has endeavoured to explain this peculiarity in vision in his own case, by supposing that the vitreous humour is blue, and therefore absorbs a great portion of the red rays and other least refrangible rays; but this opinion, says Sir David Brewster, is, we think, not well founded. Sir David's own opinion, however, is founded no better, for he speaks of the defect as a singular effect of the retina. Sir John Herschell, though no doubt unacquainted with phrenology, adopts the true opinion, and attributes (in the "*Encyclopædia Metropolitana*") this state of vision to a defect in the sensorium, by which it is rendered incapable of appreciating those differences between rays on which their colour depends.

Dr. Elliotson showed that an advance had been made upon this subject since the time of Gall, by the establishment of the fact that the deficiency related commonly to the red ray, and urged the necessity of collecting as many of these cases as possible, with a view of determining the relative frequency of deficiency in regard to the yellow and the blue ray, and of deficiency in regard to any two of the three primitive rays. He also suggested that it would be interesting to learn whether some cases of blindness, in which the eye appeared perfect, depended upon an inability to discern any of the three primitive rays, and were attended by a total absence of the organ of colour. He also, after remarking that all cases of deficiency of the power of distinguishing colour hitherto

examined, had been attended by a defective development of the organ, suggested that the form and extent of the deficiency of the organ, should be carefully noted in every case, that it might be known what relation, if any, existed between these and the deficiency of judgment.—*Lancet*, July 14, 1831.

7. *Weight and Bulk of the Human Heart*.—With a view to determine the bulk and weight, absolute and specific, of the human heart, Dr. JOHN CLENDININE examined with care, nearly 400 hearts of persons of both sexes, and all ages above puberty; this organ was then measured in water for bulk, and in the balance for weight, and subsequently classified according to age, sex, and disease. The result was, that the healthy male heart averages for all ages above puberty, about nine ounces, avoirdupois, in weight, and about half an ounce less in bulk; and that the dimensions of the female heart are nearly an ounce less; it was further ascertained that in specific weight the heart varies little, appearing rather to lose in density than gain, by age or disease. It appears, further, from observations made on nearly 200 subjects, that the relative weight of the heart, after puberty, and after death, was to the whole person about 1-160th for the male, and 1-150th for the female: while, with respect to the influence of age, it was proved that the heart rises in weight, both absolute and relative, from infancy to extreme age; the increase amounting in the male, above puberty, to between 6 and 7 per cent. in relative weight, and in the female to as much as 29 per cent., the increase in absolute weight being striking in the males only: viz.—13 per cent.—*Journal of the Statistical Society of London*, July, 1838.

PATHOLOGICAL ANATOMY AND GENERAL PATHOLOGY.

8. *On Epidemic Epilepsy in Schools*. By Dr. MEYER.—The free school of Bielefeld is a well-aired, not overcrowded room, in which the boys and girls are taught at the same time. A young girl of the name of Arnold had for some time been subject to epileptic fits, and had been repeatedly seized during the school hours, on which account she was forbidden to attend. Apparently restored to health she was again admitted, but on the 8th of August, 1837, she was again seized, and was in consequence carried home. A few days afterwards a strong healthy girl who had occasionally accompanied Arnold home was seized with convulsions in the school-room; on the 14th two other girls, age respectively twelve and fourteen years, were affected in a like manner; but this did not prevent them from making their appearance at school on the following morning. Scarcely, however, had the business of the day commenced, when not only these two, but likewise three other girls, were affected with epileptic convulsions, and the contagion spread with such rapidity that in less than half an hour above twenty girls were similarly affected.

At first the children experienced a feeling of anxiety; they were then observed to grow pale, there was oppression of the chest, and the head became affected; trembling of the limbs followed with loss of conscience; the thumbs were bent upon the palms, the eyes were distorted, and the patient gave vent to a sudden anxious cry. The paroxysm in some was of short duration, but in others it continued for hours. None of the boys were attacked. The temperature of the room was about 18°R. (72°F.) at noon. None of the girls attacked, except Arnold, had ever previously had an epileptic paroxysm, and no material cause for the disease could be discovered. Most of the girls were approaching the age of puberty, and they were of a highly excitable temperament.

Notwithstanding that the girls who had been affected were not allowed to return to the school for a considerable time, new cases afterwards occurred, owing, it was suspected, to some of the girls who were not completely re-established having been readmitted and having suffered from fresh paroxysms. The disease was treated as purely nervous, with valerian, oxide of zinc, indigo, &c.; but on the whole with little success, for after the lapse of five months there were very few who could be considered as safe against a relapse.

The number of sufferers in the school of Reitberg was not so numerous, but was sufficient to show the facility with which convulsive diseases may be communicated to feeble and excitable constitutions.

A girl, aged twelve years and a half, had during two previous years suffered occasionally from epileptic paroxysms. Towards the end of May, 1837, she had an attack in the school, and shortly afterwards four others were similarly affected. In these cases no premonitory symptoms were observed; the patients uttered a shriek and fell insensible to the ground, convulsions generally followed, sometimes alternating with tonic spasms, but in the four last cases there was no foaming at the mouth, nor were the thumbs contracted. The paroxysms lasted about a quarter of an hour, rarely half an hour. The disease appeared to be little under the influence of medical treatment, at least the remedies employed did not seem to have any beneficial effect.—*B. and F. Med. Rev.* Oct. 1838, from *Medicinische Zeitung*, No. 8. 1838.

9. *Partial Sweat*.—The following singular example of partial sweating was communicated to the Medical and Physical Society of Bombay, by A. DUNCAN, Esq. A man was brought as a recruit to the 25th Regiment, Native Infantry, from the warlike little territory of Sawant Warree. It was found on the slightest exertion, that moisture oozed profusely from his hands and feet. He was a stout, able-bodied, healthy-looking man, such as it would be desirable to have an army composed of. The word *attention* being given, forthwith on clasping his hands, and that not very forcibly, the perspiration poured, rather than dropped from them, the ground was also bedewed around the edges of his feet, and on his changing his place, there were his foot prints in thorough wet. Being on a cow-dung floor, and desired to step about, every step was imprinted wet. His body remained unaffected.

He stated that he had been all his life subject to this affection; that he was able to work like his neighbours, but got fatigued rather soon; that the various excretions, so far as he knew, were the same in quantity and kind, as those of others; that his appetite was similar also; in short, no difference could be discovered between his usual state of health, and that of others, of good habit, excepting this singular flow of clear perspiration from the palms of his hands, his fingers and feet.

Mr. D. had no opportunity of watching the man, to know if all he had said as to his habit of body was entirely accurate; he was evidently unfit for military service, as the grasping of a musket brought the sweat streaming from his hands.—*India Journal of Med. and Phys. Science.* January, 1837.

10. *Sloughing and Discharge of about twenty-five inches of Large Intestine*.—An example of this has been communicated to the Medical and Physical Society of Bombay, by Dr. P. BROWN. It occurred in a trooper admitted into hospital, Nov. 30th 1834, with dysentery. The patient had almost constant calls to stool; the evacuations were scanty, very offensive and passed with much straining: the abdomen was slightly tumid, with general tenderness on pressure, particularly on the left side; countenance anxious and pallid; tongue slightly furred at the root and centre, with raw and reddish edges: stomach irritable, pulse soft and rather quick. These symptoms continued until the 20th Dec., when, while straining at stool, there came away a membranous tube about 25 inches in length, which on examination proved to be a portion of large intestine. This was of its natural calibre but its walls were much thickened; its three coats could be readily separated.

After the discharge of this portion of intestine, the evacuations, though still dysenteric, were passed without straining, and often involuntarily; gradually, however, they became less frequent, and the power of retaining them returned. The nausea and retching ceased, but the least increase in diet always proved prejudicial. January 18th, the appetite having become very keen, chicken was allowed; much irritation resulted, and though the former diet, bread and milk, was restored, still the patient continued restless and uneasy, but without any

— alarming symptoms till about an hour before he died, on the 20th January, when he complained of excruciating pain in the abdomen.

On inspection after death, the small intestines were found so knotted together that they could not be traced: the large intestine was much shortened, and not a vestige of the sigmoid flexure existed. The rectum was much increased in capacity.—*Ibid.*

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11. *Enormous Dilatation of the Stomach.*—A remarkable example of this has been communicated to the Medical Society of Toulouse by M. SERAIN. It occurred in a man thirty-six years of age, a great eater, and who selected for his food the most indigestible and substantial articles, and drank the strongest liquors. He had been affected for eight or nine years with copious and frequent vomitings, and was greatly emaciated. He died of influenza. On examination after death, the stomach was found enormously distended, and occupying the whole abdomen; its form natural. The diameter of its greater curvature was three feet two inches. It contained ten pounds of sanguineous fluid, and its parietes were three lines thick.—*Journ. de Med. et de Chirurg. Prat.* August, 1838.

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12. *Researches relative to the causes of sudden death.*—The opinion is still entertained by most physicians that apoplexy is the most frequent cause of sudden death. M. ALPHONSE DEVERGIE, who has the medical direction of la Morgue, the place where the bodies of unknown persons who die suddenly in the streets of Paris are carried, has endeavoured to ascertain how far this opinion is founded in truth, and has found that sudden death from an affection of the brain is rare. Of forty cases which he has examined, he has found four only in which death resulted solely from an affection of the brain; three in which there was congestion of the brain and spinal marrow; and twelve in which the lungs and brain were simultaneously affected. Sudden death from affection of the lungs alone is the most common. M. D. met with twelve cases of this out of the forty; and if to these we add the twelve examples of sudden death in which the brain and lungs were both affected, we shall have twenty-four cases out of forty in which the lungs were affected in cases of sudden death. Death from affection of the heart is the most rare. M. D. met with it but three times.

It results from these researches that sudden deaths are occasioned, arranged according to the order of their frequency, 1, from an affection of the lungs; 2, of the lungs and brain; 3, of the brain and spinal marrow; 4, from hemorrhage; 5, from an affection of the heart. It is consequently an error to regard apoplexy, that is, circumscribed cerebral hemorrhage, as the most common cause of sudden deaths; since of forty cases, M. D. has observed an apoplectic collection of blood but once. Sanguineous congestions of the meninges should not be ranked among cerebral hemorrhages. M. D. has further ascertained that sudden deaths are much more frequent in winter, and more common in men than women. Among the forty deaths noted, but five were of females; and finally, that sudden deaths occur principally in persons from 40 to 50, and from 60 to 70 years of age. *Bulletin Gén. de Therapeutique*, August, 1838.

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13. *Purulent Discharges from the Bladder and Rectum in Hepatic Diseases, &c.* The July No. (1837,) of the *Quarterly Journal of the Calcutta Medical and Physical Society*, contains an interesting memoir on this subject, by J. MOUAT, Esq. The author remarks that purulent deposits have been known from very remote antiquity; instances having been mentioned by Galen, Scultetus, Paré, Belloste, Quesnay, Butnar, and others, in which the sudden disappearance of abscess has been followed by evacuations of pus from the bladder and rectum. Purulent depositions from these organs have always been attributed to the direct opening of the abscess either into the intestines, gall-bladder, ureters, &c.; but Dr. Mouat's observations have induced him to believe, that in many cases, no such communication has occurred, these discharges being depositions or excretions in the fecal or urinary passage. He proposed to illustrate this by cases bearing upon the point in question. That this occurrence in hepatic abscess should not have been recorded, is no reason why it should not exist; indeed in the present

cases the observation was made accidentally. The author quotes the abscesses which form after fractures, amputations, wounds of the head, &c. as somewhat analogous, for he considers these to act as derivatives from the original seat of the disease; and he asks, why a similar event should not take place in hepatic abscess. He then adduces the known efforts of the system in relieving itself when any of its principal functions are impeded in their natural action, as evidenced in the metastasis which take place in various diseases, and which, however explained, must be allowed to exist. The author mentions also the existence of this in the veins of several people who have died of extensive abscess, as mentioned by Andral and Alison, and the case of hepatic abscess, related by Mr. Twining, where pus was found in the right ventricle of the heart. We may look, therefore, he observes, to the vascular system as the probable cause of the removal and subsequent secretion of the matter in the cases which form the subject of his paper. The Doctor then gives thirteen cases of Europeans affected with liver abscess in which pus was passed, by stool in 10, by urine in 11, by vomiting in 1, by expectoration in 4: of these 7 died and the rest recovered. On dissection of those who died, no trace of communication was discovered between the abscess and any of the outlets through which the matter had made its way; by analogy the author concludes that those who recovered were similar cases. In two instances the disease was complicated with diseased veins, having the pathognomic symptoms of Beri-beri. In almost all the above-mentioned cases, the discharge of pus afforded great relief to the hepatic disease: the swelling of the side diminished, and the patient was easier. In those which were cured, the improvement produced by the discharges was permanent. It appeared almost critical. The discharges in several instances were simultaneous with the action of mercury on the system. Dr. M. remarks, that, although in many instances of dysentery and hepatitis there is found extensive disorganization notwithstanding the most free action of mercury, nevertheless, he has observed the remission of acute disease is generally synchronous with ptyalism, and the appearance of pus always tends to quiet the constitutional disturbance and alleviate urgent symptoms.

In an appendix the author remarks upon the distinction usually drawn between phlegmasia dolens and phlebitis, and observes, that in the cases brought to his notice, the symptoms of both have been conjoined; whence he is led to believe them only varieties of the same affection, both as to violence and the order of vessels and tissue implicated, as well as some peculiarity of action in the vessels themselves, as seen in the application of blisters, where the discharge is generally watery and limpid, yet in some cases it becomes a gelatinous mass. Dr. Mouat in this part of his communication details the experiments made by Mr. McGregor, of the 39th Regiment, upon the matter discharged in one of the cases related in the paper. These consisted of the usual processes with sulphuric, nitric, and muriatic acids. That gentleman admits the well known uncertainty of the results which attended experiments of this nature, and the impossibility of ascertaining, exactly, the distinction between pus and mucus, but that, as far as he could judge, the deposits submitted to his experiments undoubtedly were pus.

Dr. Macdonald observes, that in the course of the experiments which he made upon these reports, he observed, that the pus taken from the breast of a native woman six months pregnant, when dropped into several boiling solutions, coagulated. In a solution, carbonate of potash and ammonia, a perfect coagulum was obtained; and in muriate of ammonia, a very consistent coagulum took place from very watery pus.

Some blood taken from the woman above-mentioned presented upon the under side of the coagulum some discoloured spots. These spots ran towards the centre of the clot. In the clot last obtained some of these spots became converted into an excavated scab, having the appearance of lymph or pus dried. The rounded part in both cases looked like tubercle, or the masses described by Carswell as appearing in the blood in the spleen of tubercular subjects.

14. *Results of Re-vaccination in Silesia.*—Dr. AGEZS practised re-vaccination on 962 persons, during the year 1836. The operation succeeded perfectly in 822 of these cases; in 68, the pustules did not exhibit a mature or complete development; and in the remaining 72, no effect whatever was produced by the punctures.

In many cases, the regular and characteristic vaccine pustule made its appearance as early as the third, and had acquired its full size by the fifth or sixth day. In general, the author remarked a more decided reaction in the lymphatic system, than usually happens after a first vaccination. Often did the patient, in the course of two or three hours after the operation, begin to experience a smarting sensation along the arm and in the armpit of the affected side. During the period of suppuration, the arm not unfrequently swelled considerably, and the system became somewhat feverish. But the pustules resulting from re-vaccination never exhibited *cette belle coloration perlée* of those produced by the first operation: they were of a grayish hue. On the whole, too, their progress was decidedly more rapid, more especially in their last stage, or that of drying and desquamation. In some cases, in which no regular or characteristic pustules were formed, the punctures became nevertheless surrounded with an areola of inflammatory redness.—*Med. Chirurg. Rev. from Pfaffs Mittheilungen.*

15 *Results of Re-vaccination in the Prussian Army during 1836.*—The entire number of persons re-vaccinated was 42,124. Of these, 32,635, exhibited the cicatrices of a former operation on their arms. In 6,543 persons, the cicatrices were unsatisfactory; and in 2,840 there were no traces at all of them.

In the re-vaccinations of this year, regular vaccine pustules or vesicles were formed in 18,136 instances; in 9,940 they were of irregular or imperfect development.

In 14,048 the operation failed in producing any effect; but on repeating it a second time, it took effect in 1,569 cases, and again failed in 8,205 cases.

The number of pustules induced, varied from one to thirty, in different individuals.

Among all the persons re-vaccinated during this and the preceding one or two years, 14 only were attacked with any of the forms of the prevalent varioloid disease: there was not, however, a single example of genuine small-pox met with, although the epidemic existed in the country.

The lymph employed was very generally taken from the arms of young children; and lymph that had become dry was always avoided.

On comparing the results of re-vaccination during 1836, with those of preceding years, the reporter states that he is led to the conclusion that the disposition or tendency to contract a new cow-pox, (in other words, to be affected by re-vaccination,) and consequently the liability to variola, seem to be increasing every year. Of 42,124 persons re-vaccinated in 1836, the operation succeeded perfectly in more than 18,000; whereas of 48,478 persons re-vaccinated in 1833, only 15,269 were affected; of 44,454 in 1834, only 16,679 were affected; and of 39,192 in 1835, only 15,315 were affected.—*Ibid. from Medicinische Zeitung.*

16. *Results of Re-vaccination in the Prussian Army in 1837.*—The gross number of troops vaccinated in the Prussian army, during the year 1837, was 47,258.

Of these, there bore traces of previous vaccination—evident marks, 37,299; doubtful marks, 6,903; no trace, in 3,056. The vaccination was followed by—regular pock, in 21,308; irregular, in 10,557; and had no effect in 15,393. The latter were again vaccinated—with success, in 2,243; without success, in 9,771.

Of the whole number vaccinated or re-vaccinated with effect, there were attacked, during the course of the year 1837, with varicella, 14; with varioloid, 7; with true small-pox none.

MATERIA MEDICA AND GENERAL THERAPEUTICS.

17. *On Arsenic as an Antiperiodic.* By G. G. SIMOND, M.D.—It is stated that it was during the great prevalence of intermittent fevers in Poland that the powers of arsenic as an antiperiodic were first tried. M. Desgranges has collected all that has been handed down to us on this subject.

In this country, (England,) about the year 1780, an intermittent fever invaded various parts of this island; it was of an unusual character, it continued for two years; its obstinacy eluded all attempts to subdue it, and its distinguishing characteristic was its resistance to the Peruvian bark; and great was the disappointment from a medicine which had always obtained the character of a specific. A valuable paper from the classic pen of Sir George Baker is extant on this subject; it was read at a meeting of the College of Physicians, January 10, 1785. From this we learn, "that a medicine compounded of arsenic and opium, the dose of which is a very few drops in water, was taken by some of the inferior ranks of the people, and sometimes successfully, but, now and then, violent vomitings, colics, and dysentery, were the effects of it, especially when a patient, too desirous of a compendious cure, exceeded the dose limited." We likewise learn that a practitioner in the county of Dorset, dispensed this remedy among his patients with great success. He found that it very rarely failed to stop the fits very soon; he was not aware of its composition, but stated that he had reason to think that the medicine had some active poison in it, which injured the constitution afterwards. He saw more than one case where an ague thus cured was followed by a palsy of the lower extremities, so that, at length, he was induced to abandon the remedy.

Doubtless the unscientific form in which the arsenic was used, and the badly regulated doses, which seem to have been very little attended to, were sufficient causes for the neglect of the remedy; nor can we be surprised at the language used by the authority I have just quoted; he says—"Arsenic is mentioned in books as a febrifuge, but it is one of those substances of which we are not, as yet, so far masters as to be able, by any act, to render it transferable from the list of poisons to our materia medica; and it cannot be deemed to be a proper remedy for an intermittent fever, while an intermittent fever is less formidable than arsenic." Dr. Fowler, of Salisbury, has, however, taught us how to obtain a most serviceable and valuable medicine from this highly deleterious substance; and the liquor potassæ arsenitis of our present Pharmacopœia owes its origin to the well directed inquiries of that excellent physician. We are now taught to form it of arsenious acid broken into small pieces, carbonate of potash, each eighty grains, compound tincture of lavender, five fluid drachms, distilled water, a pint. The arsenious acid and carbonate of potash are boiled with a half pint of the water in a glass vessel until they are dissolved; add the compound tincture of lavender to the cooled liquor; lastly, add besides of distilled water as much as may be sufficient that it may accurately fill a pint measure. Mr. Phillips observes, that in making this preparation, the arsenious acid usually sold in powder should not be employed, as it is very commonly adulterated with sulphate of lime or gypsum; which being insoluble in the soluble carbonate of potash, the operator supposes that it is difficult to prepare this medicine. This adulteration may be detected by heating the powder in a crucible—whatever is not volatilized is an impurity.

So highly has this preparation been estimated abroad that it is to be found in almost all the foreign pharmacopœias. Indeed, during the march of the French army into the plains of Lombardy, where, from the marshy soil, a miasma had emanated, which was infecting the soldiers, the French Directory, guided by some of those great men whose scientific inquiries were encouraged by the Government, issued a decree commanding the surgeons, under a pain of military punishment, to employ a preparation precisely similar. The highest encomiums have been lavished on Dr. Fowler; indeed, the individual who converts a poison into a valuable remedy, must richly deserve the approbation of the community.

It has been usual to commence with about five minims of this solution twice in the course of the day, and it may, with proper precaution, be increased until more than a scruple has been taken.

I have had occasion to remark to you that its effects are much more striking in the intermittent fever occurring during the autumnal months, than during that which is prevalent in the spring; and the more intensely the miasm has acted upon the system, the more decided are its good effects, whilst cinchona, and the barks of certain trees, produce their characteristic influence during the spring, and are remarkably powerful where the disorder has not gained much on the constitution. Arsenic may, therefore, be often kept back as an ultimate resource, until cinchona has failed, which, undoubtedly, in some of those remarkable epidemics which have occasionally occurred, has been found to be the case. Intermittent fever seems to become every year more rare in this country, even in soils where it was once known to be very prevalent; and the paroxysms so easily yield to remedial agents, that so potent a medicine as arsenic, and one to which patients, in general, have a strong objection, need not, at first, be employed. Care should always be taken, before its exhibition, that the bowels should be emptied, for they otherwise are not easily acted upon, and costiveness in some cases occurs, while in others, and that more commonly, profuse diarrhoea takes place.—*Lancet*, December 16, 1837.

18. *On the use of Arsenic in Cancerous Affections.* By G. G. SIGMOND, M.D.—From a very early period remarkable cures of cancerous affections were recorded by authors, from various preparations of arsenic. Amongst these, Fallopius, Bernhardt, and Roennow. Fuchsius united it with soot, and Richard Guy, with sulphur, hog's-fennel, and arrow's-foot, in order to disguise it from the patient, and it has been the principal ingredient of a great number of those quack remedies, whose bold and unprincipled inventors have obtained for themselves momentary celebrity, and ill-gotten wealth. This powerful medicine has doubtless sometimes been much misapplied in the different states of cancer; at the same time, however, medical men should not be discouraged from its not always having proved effectual, or from its having, now and then, proved dangerous. There is no doubt that any indiscretion in its use, any want of caution, may prove fatal, and notwithstanding the occasional escape of persons after the employment of fearful doses, I would impress upon your minds that you are never justified, because a solitary case, here and there, is thrust before your notice of extravagant quantities having been given, to administer, but with the remembrance of the sacredness of human life, any remedy which has the slightest uncertainty in the intensity of its action. In one of the journals I find a case where an immense quantity of arsenic was given—three hundred drops in four days—to a young lady, fourteen years of age, suffering under chorea; arsenical pills were then given “for a change;” this was continued four more days. “The nervous irritation having been supplanted by vascular action,” the drug was then discontinued; and we are told by the physician, evidently to his own great surprise, that no swelling of the face was produced, “and neither dropsy, consumption, nor rheumatism, have yet supervened.” It is from an American journal that this case is quoted by some of our own periodicals.

On the other hand, cases abound which show us that the most practical, the most experienced men have found the necessity of the utmost caution. In the reports of cases at *St. George's Hospital*, in the “*Medico-Chirurgical Review*,” is a very valuable narrative of the death of a man, sixty-three years of age, who had cancer of the tongue; the whole history presents to us a most pitiable and hopeless case. No remedy was so likely to be advantageous as arsenic; five drops of the mineral solution were taken three times daily; at the end of three days the dose was raised to seven drops; on the eighth day vomiting occurred; altogether one hundred and fifty minims had been given during that time, which was little more than a grain; the remedy was, however, discontinued, but symptoms of an alarming character came on, and the unfortunate man died on the eleventh day. As was remarked by the distinguished surgeon who superintended

the dissection, the appearances after death, as well as the symptoms that had occurred, showed that the remedy, rather than the disease, had terminated existence.

Roux furnishes us with an instance of the death of a young girl, aged eighteen, who died in consequence of the application of the *pâte arsenicale* to a cancerous breast. This paste only contains one part of its weight of arsenic to thirty-two of fatty matter, and was applied on a surface which did not exceed an inch and a half in diameter, and for one single night only; next day vomiting and violent colic supervened, and, after great suffering she died in two days. Sir Astley Cooper relates an instance where a patient had a fungus in the eye, to which the solution of arsenic was liberally applied; he complained very much of pain in the stomach, and the result was that he died of the inflammation of that organ. On examination after death, the stomach exhibited the peculiar inflammatory appearances produced by the action of arsenic. These are cases which certainly must be acknowledged to be extreme ones; but I think it right to impress upon your minds the great necessity of caution and discrimination; nor do I think if any untoward event occurred in your practice, from a very large dose, that an excuse should be pleaded on the score than in some particular case such a quantity had been fearlessly employed, and, fortunately, no bad effects had resulted.

I have already had occasion to point out to you the stages in which conium, and in which carbonate of iron are to be employed in cancer, and I have now to speak of the action of arsenic; its internal use does not seem to produce such good effects as do either of those remedies, but its external application is to be recommended when the schirrus softens and ulcerates; when the general appearance indicates that the structure of the parts has undergone a considerable change; when conium is, for a time, suspended; and when there is almost an absolute certainty that the disease will progress onwards, until death shall relieve the sufferer. The action of the arsenic extends much farther than the part with which it is immediately placed in contact; it separates the mass from the surrounding parts, in the same manner, Justamond has observed, as a nut comes out of the shell; or, as if it had been cleanly dissected by the knife. Mr. Carmichael justly remarks, that this peculiar effect of arsenic has no analogy in its action to other escharotics, or even to its own action on other tumours, which produce superficial sloughs, and destroy the parts with which they are immediately blended, and their action is easily accounted for on the general principle of chemical affinities, but the effect of the arsenic cannot be explained by the same law; indeed, the peculiar digging out of the diseased mass, if I may be allowed the expression, is one of the great recommendations to its employment in advanced stages of cancer, if the morbid alterations are not upon too extensive a surface.

The Baron Dupuytren, in order to obviate the inconvenient effects which result from a more extensive destruction of diseased parts than might be wished, has given some formulæ by which the application of arsenic, both in the form of powder and of liquid, might more nicely be adjusted. The powder is made from four, or sometimes five or six parts of arsenious acid, with ninety-six parts of calomel, and he makes a solution, or paste, with gum, in which nearly the same proportions of these two ingredients are mixed, though sometimes increasing the quantities of arsenic; he first cleans the surface of the ulcer by poultices, and then touches the sore with a small bit of lint charged with the powder, so as to cover its surface with a layer of arsenic, provided the ulcer be not of great extent; when it is not advisable to cover more than one-third, or a half, the paste is applied much in the same manner, with the assistance of a spatula; the application after having produced pain and inflammation, comes away in the course of eight or ten days, and should again be renewed, according as the circumstances may require, until the complete cure is the result, which often occurs after five or six, or even a smaller number of applications; sometimes the remedy seems to produce symptoms of poisoning, nausea and vomiting coming on. He then enjoins strict attention to diet, and more particularly the restriction to the exclusive use

of milk, as diet. There are some individuals, however, who have ascribed cancer to the use of milk, more particularly as I lately heard from an agriculturist, who has a pretension to be called a medical man, where the cows have fed much upon the different species of the ranunculus, or butter cup. It is not very long since that a diet of water only was pronounced to be a decided cure for this deplorable disease.

Mr. Blackadder, to whose experience in the treatment of ulcers by arsenic, I shall immediately advert, states that he never saw more than one instance of the deleterious operation of arsenic, externally used, although he had so frequently tried it; he attributes his success to his having always applied very large quantities, which he believes very quickly destroys the organisation, and necessarily prevent the action of absorption; but Hailes has observed, that it is altogether innoxious when applied to an abraded surface, to sores, to malignant ulcers, even in a high state of irritation, provided that the part be not recently wounded, and that no blood issues from it, for it is by the direct application to the open vessel that it is absorbed, and that with the same rapidity and certainty as if it had been injected into the veins. The powder of Frere Come, Plunket's powder, the pommade of Hellmand, which are the compositions employed most generally on the continent, to the ulcers of the face and nose, which commit such fearful ravages, generally produce eschars, considerable pain, and tumefaction; and hence the remedies of Baron Dupuytren have superseded in France these preparations; besides which great reliance has been placed on the modifying influence of the chloride of mercury, or calomel, which the learned professor uniformly joined to the arsenic, in his treatment of the various ulcerations produced by cancer, scrofula, a venereal taint, whether each appeared alone or in combination.—*Ibid.*

19. *On use of Arsenic in Hospital Gangrene.* By G. G. SIGMOND, M.D.—In hospital gangrene the solution of arsenic is found most valuable. Mr. Blackadder, during the Peninsular war, employed it at Passages with the happiest effect; and Hennen, in his "Principles of Military Surgery," gives a long description of the plan that was followed. The first step was to make the sore perfectly clean, and freed from the viscous discharge; but as this cannot be easily effected by common means, without occasioning a disagreeable oozing of blood, or a considerable degree of pain, the ablution is made from two large hospital tea-pots, one containing a hot solution of the subcarbonate of soda, the other a cold one, that the one or the other may be employed as the feelings of the patient for the moment dictate; the glutinous matter which adheres to the sore may be gently detached by means of small dossils of lint; sponges are to be avoided, in consequence of the expense, for the dread of contagion must prevent their being employed more than once; dry lint may be spread on the surface of the sore, as soon as it is perfectly clean, and removed, and fresh lint applied until the sore is perfectly dry. The solution of arsenite of potash, diluted with an equal part of water, is then applied through the means of pieces of lint, which are to be well soaked, and renewed every fifteen minutes or half an hour; sometimes, on the first application, it is necessary, particularly in irritable or debilitated constitutions, to administer an opiate, and to repeat it according to circumstances. The use of the solution is to be continued until an insensible dark-coloured and dry slough occupies the whole surface of the sore, and until the patient is completely relieved from the burning and lancinating pain, which is in some degree characteristic of the disease. These cases require great personal attention on the part of the surgeon, as the application of the remedy in this form cannot be entrusted to the patient or his usual attendants; and every step of the manipulation demands great precaution, more particularly if the fingers of the surgeon should be accidentally abraded.—*Ibid.*

20. *Medicinal properties of Cascarella.* By G. G. SIGMOND, M.D.—The cascarella has been stated, and I believe with reason, to have some influence in restoring the appearance of the menstrual excretion, after it has been interrupted

by fever. It has a marked influence if the suppression has occurred from intermittent fever, or even from catarrhal fever; but it is not to be considered on that account as an emmenagogue; its power is only to restore periodicity, under peculiar circumstances; and this has also been remarked where hæmorrhoidal flux has been interrupted by fever. It was Louis Appinus, of Herspruch, who first, in the year 1694, pointed out this singular property of cascarilla. In an epidemic dysentery, in 1719, in France, this remedy was found more efficacious than any other. Dr. Underwood had a very high opinion, founded upon experience, of the remedial effects of this bark in the gangrenous aphthæ, which sometimes proves so fatal to children. In diarrhœa it is sometimes found useful, where it is dependent upon loss of tone of the intestinal canal.—*Ibid.* January 20, 1838.

21. *On the Chirayita Gentiana; or worm-seed plant.* By G. G. SIGMOND, M.D.—This is one of those useful medicines to which we have yet to give a place in our Pharmacopœia, but which very richly deserves the highest encomiums. This plant is herbaceous, having lanceolate leaves, corolla rotate, four cleft, smooth, stamens four, capsule ovate, bifurcate as long as the calyx; such at least are the characters given in the Roxburg manuscript. It is said by Dr. Fleming to be indigenous to the mountains to the westward of the Ganges. Dr. Ainslie says what appears in the bazaars of lower India, under the Tamool name, *chayret toochie*, are small stalks of a light gray colour, and very bitter but pleasant taste; the natives consider them as tonic, stomachic, and febrifuge, and prescribe a decoction or infusion of them, in the quantity of a small teacupfull, twice daily. The specimens which I have placed before you, I owe to the kindness of Mr. Reece, by whose father it was first imported into this country, and from whom I first learned the value of this most useful tonic, which I prefer, both from the degree of power it possesses, and for the agreeable effect it produces, to every medicine of that class with which I am acquainted. It is imported in the coarse matting in which you see it enveloped; it has been at times very scarce in the drug market, but it is now very plentifully sent over to us. It is in long cylindrical stalks, externally of a brown colour, but whitish within, of a very peculiar bitter flavour, without much aroma, not at all austere; the smaller twigs are more intensely bitter than the larger ones. It yields up all its power to water, and a concentrated infusion may be obtained, so marked in its bitterness as to produce almost instantaneous vomiting: but two drachms in a half pint of water is quite powerful enough as a tonic. It seems that not only does it act upon the stomach, imparting to it a greater degree of vigour, so that the increase of the gastric juice is attendant upon it, and thus the first process of digestion promoted, but the secretion of the liver is materially improved by it; for I have always found that, where it has been given, the stools have speedily acquired the healthy tinge of bile, and also the muscular activity of the bowels has been increased, for the peristaltic action becomes more regular, and performed with more decided periodicity. So satisfied have I been with the chirayita, that I have never failed to recommend it to my medical friends, and I have uniformly found my own views confirmed by the experience of others. Several members of the *Medico-Botanical Society*, who were induced to employ it from the observations I made there, have spoken to me in very strong terms of its efficacy, and I have little doubt it will become a very popular medicine amongst you, when you have given it a fair trial. Its beneficial effects are generally much more permanent than the greater number of bitters; nor does it, as most of the barks, woods, and roots which we employ for dyspeptic states, and for all that host of morbid affections which depend upon disordered function of the stomach and bowels, ever constipate the bowels, or interfere with the healthy function of the liver; on the contrary, it corrects the secretion of the bile, and gently operates on the bowels. I have often recommended a tincture made of it in cases of indigestion occurring after mental fatigue, where the nervous system has acted upon the organs of assimilation, and with the greatest success. The tincture may be made by macerating five ounces of the chirayita in two pints of proof spirit for fourteen days, and straining. This contains all the powers of the herb; it forms a very strong but very plea-

sant bitter, by no means unpalatable; it is grateful to the stomach, and diffuses throughout the system a genial warmth. A teaspoonful may be taken two or three times in the course of the day, in a glass of water, or in an ounce of the compound infusion of gentian, in the infusion of hops, in an infusion of camomile, or in that of cloves. In this state, however, it seldom acts upon the bowels, or produces those copious bilious evacuations which occur where the infusion has been used.

I have often found chirayita very much to be preferred to sarsaparilla when large quantities of mercury have been taken, and often, after salivation has been produced, the system more quickly recovers its lost equilibrium than from the use of any other drug with which I am acquainted. It has likewise been very strongly recommended in leucorrhœa, dependent upon a general relaxed condition of the female frame; it has even been called a specific remedy. At that period of life in which the menstrual secretion is about to disappear, and in which there is great carefulness to be observed, lest the employment of medicines injudiciously may lay the foundation for disease in the uterus or in the mammæ, this tonic is very effectual, it produces no determination to any of the organs, but combines the power of invigorating, with that of removing obstructions. I have thus spoken of a remedy from which I have derived the greatest advantages, and which I, therefore, can strongly recommend to you, begging you at the same time to bear in mind that it is not to be indiscriminately given; for, although I know of no bad effects which have been the result of its administration, still it is evidently a very powerful agent, and the Hindoos, with whom it has been long a favourite, always inculcate the necessity of caution. The morbid condition of the stomach in which it is most serviceable, is that marked by flatulence, heartburn, sluggishness of the bowels, great nervousness, want of sleep, general uneasiness, and where an indication of the disordered secretions becomes known to us by the sordes on the tongue, the high colour of the urine, and the altered colour of the fæces; where, however, the nervous system is so much disordered that the circulation has become more rapid, it has not such marked good effects, nor can it be given until due precaution has been taken completely to unload the bowels, and to diminish the tendency to excitement; and you should therefore abstain from prescribing it where there is flushed face, throbbing of the carotid arteries, sensation of burning in the palms of the hands, in the soles of the feet; should there be any confusion of mind, or unwonted state of sensation, through the usual channels, you should be cautious. Nor are these indications ever to be passed by when tonics appeared to be required, for they foretell much mischief, and there is much attention demanded in these instances amongst the class of nervous and dyspeptic patients, amongst whom, in a large city, a full share of your practice may fall, where so many causes of mental and bodily depression exist. There is amongst some of the foreign dispensatories, under the name of gentianella, a very agreeable bitter; it is the dwarf autumnal gentian, the *gentiana amarella*; it is a favourite amongst many foreigners, and it possesses some marked characteristics; I do not, however, think it has many claims to our consideration.—*Ibid.* January 27, 1838.

22. *On the Quassia Excelsa.* By G. G. SIMOND, M.D.—The wood of the tree known in the West Indies by the name of bitter-wood, or bitter-ash, has been, since the discovery of the New World, introduced into practice as a useful tonic, and as a powerful bitter, and these are its chief characteristics; it is deficient in aroma, nor has it any of that grateful flavour which belongs to the greater number of this class of useful agents. It is a cheap substitute for some of the more agreeable bitters, and it is occasionally found amongst the unfortunate class of persons who have been addicted to dram-drinking, more efficacious than the more delicate tonics. Some of the hospital and dispensary patients prefer it to any other, and seem to derive very considerable benefit from persevering in its use, where the natural tone and vigour of the stomach have been much impaired by the destructive agency of ardent spirits. It cannot, however, be taken by those who are in possession of the due functions of the stomach, without feeling a

degree of nausea, which becomes insupportable if a large quantity is swallowed.

All the bitterness, and with it, the medical properties, are very quickly taken up by water; and the formula, for the infusion of quassia is thus to be made:—Take of sliced quassia two scruples, boiling distilled water a pint, macerate for two hours in a vessel lightly covered, and strain. As very few substances produce much alteration upon this infusion, it may be combined with the greater number of salts; the preparations of iron do not affect it; the nitrate of silver, however, causes a soft flaky yellow precipitate, and the acetate of lead a copious white precipitate. It is generally necessary to prescribe something in union with it, such as the compound infusion of orange peel, the infusion of camomile, and a few drops of sulphuric acid, which generally render it much more agreeable to the stomach, and likewise seem very much to influence its good effects. Alcohol, likewise, takes up its bitterness; and of this both the Edinburgh and Dublin Colleges availed themselves for the preparation of a tincture; but I am not aware of any advantages which it possesses, the infusion answering all the purposes. In powder it can scarcely be given, as it cannot easily be reduced to that form, and the raspings are somewhat tough and indigestible; I have, however, known it chewed for an hour or two before dinner in a very wretched dyspeptic case, with something like advantage; it alone could give an appetite for food.

There is little doubt, in the bilious fevers of hot climates, it has proved eminently successful. Gibson and Lettsom have pronounced it serviceable in these diseases. It has obtained a reputation abroad in hysteria, in gout, and in periodic headaches. Its most striking characteristic is its power of retarding the progress of putrefaction; a small quantity of infusion will, if added to meat, prevent its speedily losing its odour and natural appearance, and hence it has been classed among the antiseptics; this does not seem to depend upon its bitterness, for other bitters have but little of this power. In diarrhoea, dependent upon a laxity of the muscular fibre of the intestines, it has also been very highly lauded, and its bitterness has led to its use as an anthelmintic. This drug has been often added to beer to give the bitterness which belongs to the hop, but it is very prejudicial, and beer thus formed is very apt to affect the bowels; and it wants altogether the fine flavour and agreeable aromatic odour which is obtained from the hop.—*Ibid.*

23. *On the Therapeutic properties of the Cocculus Palmatus or Calumba Plant.* By G. G. SIGMOND, M.D.—The knowledge we have of the value of the calumba root is principally to be ascribed to Dr. Percival; his essays, medical and experimental, contain some very valuable dissertations on many subjects, and amongst them is one entitled, “Observations and Experiments on the Calumba Root.” It has been found that modern practice has verified the inductions of Dr. Percival, and the diseases in which he recommended it are frequently controlled by its use. In diarrhoea, and more especially that which proceeds from an inordinate secretion and discharge of bile, where astringents would be hurtful, it seems to correct the irregular action, and to diminish gradually the increased action of the liver. In bilious colic, where there is severe sickness and vomiting, it has been also much prized. It was prescribed with very considerable advantage by Mr. Johnson, in the East Indies, who had the care of a hospital ship, during the prevalence of the cholera, and it sooner checked the vomiting than any other remedy which was used. It has been employed with success in bilious fever; and Dr. Haygarth, in a fever of that kind, which had been epidemic at Nantwich, and other parts of Cheshire, found it to supply the place of cinchona bark, correcting the bile, restoring the proper tone of the stomach, and of the whole habit; it also prevented relapses, to which, in that fever, the patients were very liable.

During dentition children are very apt to be subject to severe vomitings and diarrhoea, and very often instant relief is procured by the calumba root, when other efficacious remedies have been tried in vain. In enfeebled states of the

stomach, brought on by dissipation, by hard drinking, where the appetite fails, where nausea and flatulence distress the individual, this may be administered, combined with the common gentian, or with chirayita, infused in a little Madeira wine; and, during its use, the tincture of rhubarb may occasionally be prescribed as a warm and strengthening purgative. Vomiting, arising from disordered function, from depraved secretions of the gastric and pancreatic juices, when it is totally independent of any diseased action of the kidneys, which is more generally the cause of habitual vomiting than anything else, is essentially relieved by the occasional use of the calumba root, and then it is very necessary to combine it with warm cordials, with the diffusible stimuli, or any of the aromatic bitters. In that highly distressing state of stomach which occurs in the earlier stages of pregnancy, where nausea and sickness are the constant attendants of the early morning, where the sight of almost any food is very apt to produce vomiting, and where the want of appetite, or a depraved desire for food occurs, I have very constantly recommended the infusion of calumba, with very great relief to the patient, more particularly where the bowels are kept in a gently relaxed state by magnesia, which, by its absorbing power, and its neutralisation of the acid which is at this period generated, becomes a mild and gentle aperient, and at the same time alleviates the disordered sensations that are so usually complained of.

Calumba root has the power of retarding putrescency, and has been observed to moderate alimentary fermentation without suspending the process of digestion. As its taste very much resembles mustard, Dr. Percival was led to make some comparative experiments, with infusions of calumba, of mustard, and of chamomile, and they were in favour of the calumba root. He was, therefore, led to the conclusion, that it had the advantage over other bitters in disorders of the stomach attended with "violent fermentation of the food." Certainly, where there is an extrication of a gaseous flatus, and much acidity, it has very considerable powers, and may be safely taken by the dyspeptic a few minutes before a meal. It appears neither to increase the fulness nor to affect the regularity or velocity of the pulse. It is particularly serviceable where a milk diet has been found necessary for the nutrition of the body, for it prevents the acidity which is so generally the consequence, and likewise diminishes the tendency to flatulence.

Dr. Denman has found it preferable to bark in the low stage of puerperal fever. As for any benefit in phthisis pulmonalis and in hectic fever, I believe little to be derived from it further than that the organs of digestion are better capable of bearing it as a tonic than they would the Peruvian bark, which, in some instances, produces diarrhoea. The chewing the root has been recommended in dyspepsia, in pyrosis, and in gastrodynia; altogether it may rank as an agreeable tonic, free from the objections which are raised to the stronger bitters, and sufficiently powerful to strengthen the system where no very acute disease, nor any very materially altered state of organs has occurred.—*Ibid.* February 3, 1838.

24. *Kreosote in Gastro-enteritic Irritation.*—Dr. JOHN BURNE has employed Kreosote in various forms of irritation of the bowels and stomach with great advantage. For the relief of the nausea and morning sickness of intemperate persons, he states it to be strikingly efficacious.

He gives it in the dose of from one to two minims with ʒj of mucilage, and ʒix of water. The dose may be repeated in three, four, or five hours.—*London Med. Gaz.* Aug. 1838.

SPECIAL PATHOLOGY AND SPECIAL THERAPEUTICS.

25. *On Extension, Shampooing, and Percussion (Percussion Cadencée) in the treatment of Muscular Contractions.*—The *Revue Médicale* for Jan. 1838, contains a very valuable paper on this subject by Dr. RECAMIER, the distinguished physician to the Hôtel Dieu of Paris.

The peculiar functions of all the organs of the body may be disturbed, Dr. R. remarks, either directly or indirectly—the deviations from health being in many cases dependent upon the state of an organ at a distance from the one which exhibits the morbid phenomena.

The contractile functions of the muscles, involuntary as well as voluntary, not unfrequently exhibit the truth of this remark. Dr. R.'s object, he says, in adducing the following cases is to point out the great efficacy of simple mechanical means in rectifying many muscular ailments.

1. About eighteen years ago, Dr. R. was consulted by a middle aged gentleman, who had for upwards of four years been regularly nailed to his bed by a pain in the right side of the neck, shoulder, and arm, which was so agonizing on the slightest movement that often he could not refrain from screaming out.

All sorts of anodynes and emollients had been ineffectually tried. Dr. R. advised the use of percussion repeated at regular intervals (*percussion en cadence*,) with the hand on the affected part. At first it was to be administered in gentle taps, and gradually with more and more forcible beats. By the aid of this simple means alone, the patient was speedily relieved from all his suffering, and was soon enabled to resume his duties as a judge of the peace.

2. A young girl, 18 years of age, was admitted, in 1836, into the Hôtel Dieu, under the care of M. Recamier, for pleurisy. At the beginning of the following year, the catamenia, which for sometime back had been scanty, were suddenly arrested by exposure to wet and cold. Dyspnœa and general *malaise* were the consequence. She was re-admitted into the Hôtel Dieu. Leeches were applied repeatedly to the vulva; but then the left arm, fore-arm, thigh and leg, became affected with extreme rigidity, and these symptoms were accompanied with retention of urine, and with a most painful difficulty in evacuating the bowels.

Bleeding, anodynes, in enemata, as well as given by the mouth, &c., &c., were freely employed, but with no avail; and this poor creature remained for two entire months in this most distressing situation of stiffness of the left limbs and retention of the urine and the fæces.

On examining the rectum it was found not to contain any hardened fæces; but the *sphincter ani* was exceedingly contracted.

Dr. R. dilated the stricture; the pain, although severe at the time, ceased almost immediately, and the evacuation of the bowels became at once much more easy.

The result of this first trial induced Dr. R. to treat the urinary affection in a similar manner; and with this view he began to work or knead (*masser*) the neck of the bladder against the pubes, by means of a finger introduced into the rectum; the strangury ceased as quickly as the constipation had done.

Dr. R. then resolved to apply a similar mode of treatment to the contracted muscles of the limbs, acting as in cases of ordinary cramp.

He commenced with the arm; and it was not without great difficulty that he overcame, little by little, sometimes by continued efforts, and at other times by efforts at regular intervals, the resistance of the extensor muscles of the fore-arm, the flexors of the hand, and also of the deltoid and other muscles of the shoulder-joint.

By dint of patience, however, the arm was bent, the hand opened, and the arm was gently removed from the side; then laying hold of the hand, Dr. R. kept swinging it about.

After this rather violent, and moreover painful, manipulation had been continued for some time, it was found that the patient was able to move her arm about herself.

Dr. R.'s attention was then directed to the affected lower extremity; but here it required the strength of three people to bend first the knee and then the thigh on the pelvis. We may readily suppose that these efforts were attended with great suffering to the patient. When the pliability was once restored, the limb was swung about from side to side for some time. This did not require

to be continued long, till the girl was able to use the limb herself, so as to walk about the ward.

Gradually she recovered the use of all the contracted parts, so that she soon left the hospital nearly quite well.

The *third* and *fourth* cases were of wry neck; in both, the disease was cured by the gradual but forcible extension of the contracted muscles.

The *eleventh* case which M. Recamier relates, was one of permanent and painful rigidity of the muscles on the back of the neck, in an elderly lady, who was in consequence of the affection confined constantly to her sofa. A variety of means had been ineffectually tried for a length of time, when, on the suggestion of our author, shampooing and compression speedily effected a cure.

5. Five and twenty years ago, Dr. R. was consulted by a lady, who had long severely suffered from a *fissure of the rectum*, for which the late Baron Boyer had divided the sphincter.

The operation, however, did not prevent a relapse of the disease, and the patient continued to suffer dreadful pain in the rectum, especially on going to stool. Dilatations of the sphincter and of the lower end of the rectum by means of bougies, gradually increased in size, ultimately succeeded in effecting a perfect cure. It is to be remarked that in this, and in many other similar cases, the dilatation was attended with excruciating pain.

Dr. Recamier mentions several other instances of painful constriction of the anus, either simple or complicated with hæmorrhoids, fissures of the rectum, &c., in which the use of gradual but forcible distension of the gut was speedily followed by great relief, and ultimately by complete recovery.

He adds that the surgical operation of dividing the sphincter may be dispensed with in the majority of cases.

6. Several years ago Dr. R. was sent for to a middle-aged lady, who was suffering dreadful torture from a nervous apyretic fever.

Without delay, he placed his extended palm on her belly, and commenced a gradual and firm compression—this had not been continued long before the severity of the suffering quite ceased. In a future paroxysm, I made her waiting-maid sit upon her mistress's abdomen; and this mode of compression was speedily effectual.

In another case of a like nature, he used with success a band drawn very tightly round the abdomen; adding, if necessary, a pad or cushion over the seat of the pain at the same time.

When in severe colic the intestines are felt through the abdominal parietes, like hard cords or serpents, Dr. R. has repeatedly relieved the patient's sufferings by kneading them, as it were, with his hands, so as to overcome their unnatural state of constriction.

7. A lady, thirty-two years of age, had long suffered from excruciating pains in the hypogastrium, unattended, however, with fever. On examining per vaginam, the uterus was felt to be quite healthy; but, on examination by the rectum, the posterior surface of the uterus was found to present several inequalities to the finger. This case Dr. R. regarded to be one of a purely nervous, or muscular character, and likely therefore to be benefitted by compression.

Grasping the uterus in the hypogastrium with his left hand, he pressed upon, with two fingers of his right hand in the rectum, the inequalities just now mentioned; he was surprised to find them gradually disappear; while at the same time the patient, who at the beginning of the experiment suffered most severe pain, declared that she was now comparatively quite easy.

These inequalities having been in this manner dissipated, on three or four occasions, the pains ceased to return.

The cure was rendered permanent by the use of a bandage, tightly laced under the pelvis and hypogastrium.

What relation is there, inquires M. Recamier, between the cause of these uterine pains and the partial spasms of the womb—an organ which we know to be muscular and eminently contractile?

The next two cases, which our author records, are instances of violent intestinal spasms, which were speedily relieved by the employment of forcible compression, and of enemata of warm water administered at the same time.

10. A lady, thirty years of age, had for several months been affected with a permanent and apyretic hiccup, the fits of which were so violent, as quite to lift up and shake every part of the body. Various remedies of an anodyne, antispasmodic, &c., nature had been employed, but without decided benefit. I suggested the use of a firm belt, provided with a pad or cushion, placed over the pit of the stomach. By this simple means alone, the patient got entirely rid of her annoying ailment.

12. A young lady was, in 1834, affected with various chlorotic symptoms, for which steel, active exercise in the open air, &c. &c. were recommended by Dr. Colson, of Beauvais. In 1835, after exposure to wet and cold, she began to be affected with an incurvation of the spine to the left side, so that the trunk formed at length an angle of forty-five degrees with the vertical axis of the pelvis; and, at the same time, the right shoulder was lifted up to almost a level with the head, and the right forearm was immovably contracted upon the arm. Such was the condition of this poor invalid when she was sent to Paris to be seen by MM. Andral and Marjolin, and by myself.

Leeches, cupping over the spine, baths, &c. had been repeatedly tried; but without any effect. The result of the metropolitan consultation was to recommend the use of gymnastic treatment, of fumigations, of leeching and cupping, of embrocations, &c.; but these means were used with no better results than heretofore.

She was then put under the care of M. Guerin, and subsequently of M. Humbert at Morlaix; and, although nearly two years were spent in trying various remedies, the condition of the patient was little, if at all, improved.

Upon her return from Morlaix, she once more consulted M. Recamier, who, remembering the striking results obtained in the second case, suggested to M. Colson to try a similar mode of treatment.

Severe pain was caused by the forcible extension of the forearm, combined with the shampooing of the biceps muscle. This might have been expected, seeing that the muscle had been permanently contracted for upwards of three years. The gradual extension and kneading of the muscles of the affected shoulder, and of the trunk, were attended with much less pain; indeed the manipulation, although very irksome, was almost immediately followed by a feeling of great relief. The improvement of the state of the shoulder and of the affected side of the neck was speedily most remarkable; the condition of the arm and fore-arm was not so promising.

By continuing, however, steadily the same plan of treatment, this young lady gradually recovered the use of the contracted limbs, and was enabled to resume her former habits; whereas, during the preceding three years, she had been quite shut out from society, and an object of great helplessness.

13. Last December Dr. R. was sent for to meet MM. Chevreux and Lisfranc in consultation upon the case of a middle-aged lady, who had been affected some months previously with hysterical ailments; on the cessation of which there supervened a violent pain, first in the coccygeal, and then in the cervical and occipital regions, recurring in fits of the most excruciating agony.

During the continuance of these most severe sufferings, there were also, now and then, symptoms of a subacute inflammation of the uterus and its appendages present.

The patient had been visited by MM. Andral and Chomel. A host of medicines, antiphlogistic, anodyne, epispastic, derivative, &c. had been tried; but without any decided benefit. The quantity of opium, which she had taken without producing even narcotism, was immense. What had produced perhaps more relief than anything else was the application of four grains of the extract of stramonium to a blistered spot on the scalp: but the symptoms of poisoning

from it were so alarming that the physician was unwilling to repeat the remedy.

M. Recamier having attentively studied all the phenomena of this very aggravated case, suggested the following means to be tried: a firm belt round the hypogastrium, provided with a strap and cushion to compress the os coccyx and the fundament; enemata of assafœtida, camphor, castor, opium, and sometimes of quinine, when the return of the paroxysm appeared to be at all periodic; the internal use of pills of musk, camphor, and assafœtida; electro-puncturation; and lastly, the extension and shampooing of all the muscles which were at any time affected with cramp.

Before leaving the house of the patient, M. Recamier had an opportunity of witnessing one of her dreadful paroxysms of pain, which had, hitherto, usually lasted for three or four hours; the head was thrown backwards, and her features were distorted by convulsions. Having satisfied himself that the muscles on the back of the neck and shoulder were violently contracted, he requested MM. Chevreux and Lisfranc to fix the two shoulders, while with one hand he (M. Recamier) forcibly drew the head forward, and with the other he shampooed the affected muscles.

The patient all this time was screaming out with pain; but no sooner was the head fairly bent forward than she began to smile, and confessed that she was quite easy. M. Recamier advised that the head should be moved about from side to side for some time, in order to prevent the speedy return of the cramp.

The subsequent relapses of the disease were always treated in the same simple manner, and with equally gratifying success.

M. Recamier closes his interesting and instructive paper by the enunciation of the following conclusions:

1. It is necessary to discriminate those spasms or muscular contractions, which are not dependent upon, or proceed from, an affection of the nervous system, but which constitute a direct lesion of the contractile functions of the voluntary or involuntary muscles themselves.

2. In idiopathic muscular contractions, in wry-neck, in dyspnœa, in spasmodic colic, in permanent spasms of the sphincters, &c., the use of extension, compression, and shampooing, and the application of the cupping-glasses, seem to be by far the most efficacious means of treatment.

3. Hence it is rarely necessary to have recourse to section of the contracted muscles in torticollis, or in contractions of the sphincter ani; except in cases where there is an actual degeneration or morbid change of structure in the part.

25. *On the Treatment of Anasarca and Ascites by Acupuncture.* By Professor GRAVES (extracted from his clinical lectures delivered at the Meath Hospital Dublin, Session 1837-8.) I do not mean to enter into the history of this man's case, as it is sufficient for my present purpose to state that the belly was enormously distended, and the integuments so tense that it was quite impossible to ascertain the state of the liver or spleen; his lower extremities were also greatly swollen. In a case of this kind you have little to hope for from the use of diuretics, for the system is so oppressed by the great quantity of the effused fluid, that it cannot make an effort adequate to effect its absorption. The first step in all such cases must be the removal or diminution of the fluid by means of an operation. In the first place, the fluid might be removed from the cavity of the peritoneum by paracentesis, and the general anasarca might be relieved by allowing the fluid to drain off through small incisions or punctures made with a lancet in various parts of the body. For many reasons, I did not consider this to be a proper case for paracentesis, and therefore determined to try the effects of acupuncture—a remedy frequently employed in this hospital during the last three or four years, and which, in some instances, has proved successful: I say in some instances, for there are too many cases of dropsy, in which the causes of the disease are of an incurable nature. Under favourable circumstances, and

in a good constitution the simple operation of evacuating the fluid by punctures made through the skin, has been, in itself, sufficient to effect a cure. Thus, in a lady, a general anasarca came on after fever, and resisted every form of treatment I could devise; but when I had made many fruitless attempts to produce absorption by means of internal remedies, another practitioner was called in; he tried acupuncture of the lower extremities, and succeeded completely. You perceive, therefore, that although mechanical means are not addressed to the cause of the disease, and appear to be nothing more than mere palliatives, they nevertheless may sometimes effect a cure. You will find, in a late number of the *MEDICAL GAZETTE*, a very interesting letter from Mr. King, detailing the particulars of the treatment of a case of ascites by acupuncture. Here, as in the new method of treating hydrocele, the object was not merely to give vent to the fluid, but to cause it to be effused into the subcutaneous cellular tissue, external to the dropsical cavity; in its new situation the fluid is not only more readily absorbed, but is useful in preventing a fresh deposition within the sac, outside of which the fluid now is, and on which it exerts a very considerable pressure. Mr. King made more than seventy punctures in the space of two or three months, and was perfectly successful. I must refer you to his letter for the very novel and instructive details.

As yet, I have had no opportunity of trying this plan in ascites, but I have seen acupuncture applied in anasarca on several occasions. I do not think the case before us one of those in which permanent benefit may be expected, but you have all seen that considerable relief has followed a single trial of the remedy.

Most of you have, I presume, witnessed the performance of this operation by Mr. Parr. The needle is passed with a quick motion through the epidermis and cutis, and pushed on until it enters about half a line or a line into the subcutaneous cellular tissue. The punctures are about three quarters of an inch apart, and mark the angles of imaginary squares extended over a considerable portion of the swollen lower extremities. As soon as a sufficient number of punctures has been made, the patient, if able, is directed to sit up and let the fluid drain off. In this way a large quantity of water is withdrawn gradually from the system, and at little or no inconvenience to the patient. While the patient is sitting up it will be necessary to envelop the legs in flannel to protect them from cold, and the feet should rest on a piece of perforated board, by which means they may be kept as dry as possible. It will be also necessary to smear the punctured limbs with fine olive oil, night and morning, so as to prevent any bad effects from the contact of fluid. By adopting this simple precaution, you will greatly diminish the risk of erysipelas—an accident not uncommon in such cases, and not unfrequently attended with the most dangerous consequences. When the sick person is confined to bed and unable to sit up, a large piece of oil-silk should be placed under his legs, and they should be enveloped with plenty of finely-carded Georgia cotton wool,* which is to be changed as soon as it becomes moist. This serves the double purpose of absorbing the discharge, and protecting the limbs from pressure. I look upon this operation as possessing many advantages over the usual mode of making incisions with a lancet, for there is less risk of bringing on erysipelas. Here is one of the needles generally employed by Mr. Parr—you perceive it is about the size of an ordinary glover's needle, and of a triangular shape. The reason of its being made triangular is, that the puncture of such an instrument is less apt to close, for obvious reasons. The quantity of water which sometimes drains off from the punctures is very remarkable; you have witnessed the vast quantity of fluid which flowed after the punctures in the present case. When the dropsical swellings return, after a temporary cure, effected by acupuncture of the legs, it is not practicable, in most cases, to have again recourse to the remedy, for the subcutaneous cellular tissue becomes somewhat indurated, and less pervious, in consequence

* French wadding will not answer as well as the finely-carded Georgia cotton wool.

of the certain degree of inflammation which follows this operation: in such cases, some other part of the limb or surface must be chosen.

It is curious to observe the physiological effects of this simple remedy. As there is a communication between the cells of the cellular membrane all over the body, it is easy to conceive that the anasarcoous fluid may drain off through punctures in the extremities. It is more difficult to explain how evacuating the water through punctures in the lower extremities can diminish the ascites. There is no direct communication between the cavity of the peritoneum and the general cellular membrane of the body, as may be proved by the fact of persons being afflicted with ascites for months, or even years, without any œdema of the lower extremities ensuing. This fact is quite sufficient to prove that no direct communication exists between the abdominal cavity and the subcutaneous cellular tissue of the lower extremities, and consequently *that* the fluid of ascites cannot be mechanically evacuated by drains established in the legs. How, then, is the diminution of the ascites produced? By the relief which the general system experiences from taking off an oppressive load of fluid, by emptying the subcutaneous cellular tissue, the general disturbance is lessened, the energy of the absorption increased, and a quantity of the intra-peritoneal fluid is consequently carried off. It is unnecessary to say more respecting the treatment of this case. I shall only observe, that in cases of dropsy, when you have produced a large drain from the system, you must support the patient by means of nutritious diet and wine, combined with full doses of opium*.—*London Medical Gazette*, October, 1838.

27. *Examination of the received doctrine of Bright's Kidneys.* By Professor GRAVES.—The next patient to whom I shall direct your attention is a man named William Barton, lying at present in the large chronic ward, for many years a soldier, and much exposed to the vicissitudes of climate in various foreign stations; he has also been affected with dropsy for the last twelve months. When admitted, he was labouring under confirmed dropsy, unaccompanied by bronchitis and bowel complaint. He had, in fact, general derangement of the mucous surfaces, with ascites and anasarca. The usual comforts of an hospital, rest, and attention to diet, were the only means employed for the first fortnight, and these proved so far successful that the bronchitis gradually disappeared, and the bowel complaint completely subsided. It was observed, at the period of his admission, that the urine was highly albuminous, and, in this point of view, the case is deserving of attention. He was treated successfully, and as the dropsical symptoms disappeared the urine became less and less albuminous, until at length it was quite natural. This man's urine was examined daily by Mr. Moore, of whose attainments as a chemist I can speak in the highest terms. As I have already remarked, the albumen wholly disappeared, and the urine again assumed its normal character. In this way the man continued for about a fortnight, and, being greatly interested in the case, I had the urine examined every second or third day, and watched the result with the closest attention. It remained still without a trace of albumen. On last Friday, the poor man being apparently convalescent, and walking about the ward, caught cold in consequence of a draught of air from an open window, was attacked with rigors and symptoms of feverish excitement, and next day we found him labouring under erysipelas of the face. While engaged in examining him I asked to see his urine. He said there was none in the vessel, but that he thought he could pass some; and accordingly he did pass about half a pint of healthy-looking urine, but we found it to be highly albuminous, and of the specific gravity 1027. Here, then, is a case which speaks volumes with regard to the pathology of albuminous urine. A man, labouring under chronic dropsy, presents himself for admission,

* This man's case was apparently so hopeless, when admitted, that none of the pupils thought it worth while taking notes of its progress. The operation of acupuncture was several times performed, and with the aid of the usual internal treatment, a struggle protracted for several months, ended in perfect recovery.

and on examination we find his urine to be highly albuminous. Without any active measures, and almost wholly by the efforts of nature, the dropsical symptoms gradually disappear, and the urine becomes, *pari passu*, less albuminous, until at length it assumes the natural character, and ceases to exhibit the slightest trace of albumen. This natural state of urine continues for a fortnight, when suddenly he catches cold, gets erysipelas, and in the course of a few hours the urine is found to be highly albuminous again. Before this accession of erysipelas his urine was not only free from albumen, but was perfectly normal; in colour, chemical composition, and odour, resembled the urine of a person with a good digestion subsisting on a very nutritious diet. The very hour the erysipelatous disturbance came on there is reason to believe that albumen again made its appearance in the urine; in a few hours it was present in great quantity, although the secretion had a high specific gravity and a deep colour, by no means usual concomitants of albuminous urine. After proceeding for some days in the ordinary way, the erysipelas took a most unexpected and singular turn, extending from the skin by the angles of the mouth to the inside of the cheeks and lips, and finally spreading by the fauces to the larynx, where it produced suffocation. Erysipelas does not in general attack internal parts by extension from the surface. When erysipelas on the scalp affects the brain it does so without creeping inwards through any of the cranial openings. In one case, however, which I treated, fifteen years ago in the Old Meath Hospital, the erysipelas obviously crept in, *as was proved on dissection, by the orbit*; but this is very rare indeed, and so likewise is the extension of erysipelas from the face to the larynx.

This man's kidneys were found somewhat enlarged, and at first I thought they were otherwise natural, but a further examination and maceration convinced us that the cortical substance was paler than usual. Increase of size, paleness, and, *perhaps*, a very slight softness of the cortical part, constituted the whole change; there was no appearance of granulations either on the surface or in the substance of the kidneys. Does not this case, gentlemen, render it extremely probable that the general state of the constitution influences the appearance of albumen in the urine, more than any change in the structure of the kidneys, for here, the same kidney secreted, within a very short space of time, perfectly healthy, and very albuminous urine? This case, indeed, seems to establish the conclusion which I have before advocated in the "Dublin Journal," that Bright's kidney and albuminous urine are effects produced by the same general cause operating, in dropsy, on the constitution; in this point of view I shall consider, them, and my opinion is further confirmed by a very remarkable case published in the same Journal, No. 36, January 1837. by Mr. Morrison, page 474, who makes the following observations:—

"In making a few cursory remarks on the preceding case I may first direct attention to the albuminous state of the urine. At different periods, during the last five years, this fluid was examined by different practitioners, and found coagulable by heat and acids. Now, I believe it is nearly agreed, that the above state of urine designates a peculiar granulated structure of the kidneys. But here is a case, and it is the only one of which I am aware, that undeniably proves that albuminous urine may be voided even for years, without the existence of even a resemblance of such a structure in the kidneys. Drs. Hacket and Erskine, and Mr. W. Bell, who were present at the examination, remarked that the kidneys presented a perfectly natural appearance, except that of their blanched colours. I have no doubt that Dr. Bright's statements, relative to albuminous urine, will generally be found correct; but I think the foregoing case will bear me out in saying, that exceptions to them will occasionally occur, and certainly it is right, and in my opinion, not at all detracting from Dr. B., that the profession should know there are exceptions."

This is a subject concerning which I have so often written, that I am afraid of appearing guilty of a needless repetition; its importance, however, will, I trust, prove a sufficient excuse for the following observations. If albuminous urine may be secreted by kidneys in no way affected with the change of structure described by Dr. Bright, then there is strong reason for disconnecting the

two, and not considering them as cause and effect. Now, in confirmation of the above case related by Mr. Morrison, I myself have witnessed a dissection of a boy who had dropsy, with highly albuminous urine, after scarlatina, and in whom the kidneys presented a perfectly healthy structure; and Dr. Forget, of Strasburg, has recorded several others. His seventh case,* says the reviewer, "is especially interesting, as it affords an indisputable example of a most complete *albuminaria* during life, when the kidneys were found to be *parfaitment sains, sans anémie et sans granulations*. The heart was hypertrophied and the mitral valve ossified. In Dr. Forget's eighth case the urine was albuminous, but the kidneys perfectly sound. This patient likewise had organic disease of the heart."

In Dr. Forget's second case of dropsy, with albuminous urine, the patient recovered, and the urine became healthy. If, then, kidneys of a perfectly healthy structure may and do secrete, and that in numerous instances, a highly albuminous urine, and if, as in the man who gave occasion to these remarks, Bright's kidneys may secrete a perfectly healthy urine, can we attach much value to an hypothesis which seeks to establish a connection, as cause and effect, between Bright's kidney and albuminous urine? From the time this doctrine was first brought forward, I was led, by my own observations, to doubt its accuracy, and I now feel satisfied that it is incorrect. Let me conclude by repeating what I have said on a former occasion, that in dropsy, where a secretion of an albuminous fluid takes place into the serous cavities and cellular membrane in such abundance, it is easy to understand how the urine may be likewise impregnated with albumen, independently of organic alteration in the kidneys. No gland seems more liable to multiform and often sudden alterations of secretion than the kidney. At one hour healthy, deep-coloured, and of considerable specific gravity, mental motion, or an hysterical affection, may render it the next hour pale, aqueous and very different in chemical composition. To-day, in consequence of indigestion brought on by error of diet, the urine may be loaded with lithates, and may contain purpuric acid; to-morrow the former have been reduced to their natural proportions, while the latter has entirely disappeared. Again, if a peculiar change in the substance of the kidneys is necessary, to give rise to the presence of albumen, how does it happen that much greater alterations take place, permanently, in that secretion, without apparent deviation from its natural structure? The kidney of the lithic acid diathesis differs not from the kidney of the phosphatic, and in alternating calculus we do not find the renal organization varying as the urine contains, at different stages, a superabundance of lithates, of phosphates, or of oxalates. Why should the secretion of a simple animal principle, like albumen, require a change of structure in an organ which can accomplish the formation of such a variety of products, retaining all the time its ordinary size, consistency, and colour? This reasoning, together with the cases adverted to above, leaves little room for doubt on the question a tissue.

We have seen it assumed that *renal hyperæmia* of an active nature constitutes the change the kidney undergoes; I have already remarked that no two conditions of an organ can be more dissimilar than this hyperæmious state, and the yellow granular degeneration forming the extreme specimens of the disease; and yet we are taught that each of these morbid conditions of the kidney, not only differing from, but opposed to each other, gives rise to the secretion of albuminous urine. I have already shown that albuminous urine is often secreted by healthy kidneys; and Dr. Solon, who has lately published, at Paris, a very learned work on this subject, admits that in his twentieth case the albumen disappeared during four days, *at least*, before death, and yet the kidneys were hyperæmious. An acute and intelligent reviewer of Dr. Solon (*Lancet*, June 23, 1838,) remarks, "In alluding to those cases, distinct from Bright's disease, in which albuminous urine is found, Dr. Solon justly observes that they in no wise disprove the connection which may exist between the renal lesion, and that condition of the urine. The only fact," he continues, "capable of doing so,

* See "Medico-Chirurgical Review," by Dr. Johnson, (New Series,) No. 56, p. 544.

would be the existence of the renal disease, well characterized, without albuminous urine. Now, this has never been observed."

This I am very willing to admit, but draw from it a very different conclusion; *for to me it appears that the albuminous state of the urine is the cause of Bright's disease, and not the consequence.* In dropsy, a tendency to excessive secretion of albuminous fluid is observed all over the body, and in the kidney as well as in other parts; now as the secretion of urine takes place in extremely minute tubuli in the cortical substance of the kidney, and as its secretion is accompanied by the formation of various salts and acids, no wonder that *a deposition of albuminous molecules should be separated by coagulation, and should remain in the secreting tubes, which they gradually fill and distend, and thus give rise to an obliteration of tissue, termed Bright's disease.* This is a new, and, I think, a correct view of the subject, and is confirmed in a striking manner by the following microscopical observations very recently made by the celebrated Valentin:—

"It admits, no doubt, that the degeneration of the kidney, described by Bright, stands in direct proportion to the excessive quantity of albumen contained in the urine. It is not, however, yet discovered what may be the cause of this relation. Microscopic research, in remarkable cases, may be able to afford more accurate information on this point. For example, we found on the post-mortem examination of a boy, æt. 13, who, for a long period, had been afflicted with dropsy and œdema, and whose urine sometimes contained albumen in immense quantities, sometimes very little, not only effusion into the chest and abdomen, but remarkable granulation of the kidneys in the fifth stage. Both kidneys were excessively enlarged; their greatest length was 3⁷/₇₅; their greatest breadth 2". This enlargement did not exist in particular spots only, but engaged the whole substance of the kidney, and was smooth and uniform, and similar to the increase of volume assumed by a well-injected organ. Externally were to be seen the solitary ashy-gray specks; internally, tissues, particularly the cortical, were tinged of a deep yellow colour. Microscopic examination showed that, while the stretched tubuli uriniferi of the mamillæ were either empty or filled with a little fluid, the tubes of the cortical substance contained a yellowish gray mass throughout, so as to be rendered, in a certain degree, visible, as if injected. It only required a fine incision, in a clear light, to see in the most distinct manner the beautiful windings of the urinary canals in this state of injection, even in cases of moderate enlargement. The measurement of these, in the cortical substance, in the centre, was about 0.003500 P.3*; in the mamillæ 0.005400 P.3. Nothing abnormal could be perceived in the walls of the canals, nor in the substance placed between them. One kidney was finely injected. The distribution and diameter of the blood-vessels, as well as of the corpora Malpighiana, exhibited no irregularity. The mass which filled the incised canals, of a grayish-yellowish hue, consisted of irregularly granulated bodies of greater or less size, little molecular bodies, and round yellow little spheres. Similar appearances were found in the elongated canals, only in a less degree.

"If I am not much mistaken, this discovery in the kidneys goes far to prove that, in this case, the kidneys are only the receptacles of the diseased urine, and that they, on a cursory glance, have only the appearance of being diseased themselves, whilst, on the other hand, the diseased process of secretion must be sought for, not in the kidneys, but elsewhere; as, for example, in the blood, for it is well known that the urine can be secreted without kidneys."—*Ibid.*

28. *On Erratic Erysipelas.* By Professor GRAVES.—It is a curious fact that in the majority of cases this disease commences on the bridge or alæ of the nose. It is not of a phlegmonous character, and does not engage the subcutaneous cellular membrane to any extent, except where it is loose, as in the eyelids; it depends on an inflammation of the corium, particularly its external layer, giving rise to heat and tingling pain, with more or less redness and a slight degree of

* The decimal numbers are referred to a Parisian inch, as unity.

elevation, particularly at the margins, where a kind of ridge points out the line of demarcation between the healthy and diseased skin. It is not in general dangerous, rarely requires any antiphlogistic measures, and almost always spreads according to fixed laws. It is usually symmetrical, and its course is, for the most part, uniform, commencing upon the nose, and spreading gradually over the head, neck and trunk, in a manner which has not, as far as I know, been described by any author. It is comparatively a mild disease, and much less dangerous than another form which attacks the face and head, terminating in extensive subcutaneous suppuration. The latter spreads rapidly, and without any regard to symmetry; it is often accompanied by high fever, headache, and sometimes delirium and coma, and has attracted much attention from surgeons, as being one of the common consequences of wounds of the scalp, in persons of impaired constitution or irregular habits. But the form of erysipelas which we are now considering differs from this in many points. It generally commences on the nose, about the alæ, from which it extends gradually and slowly over the face, temples, sides of the head, nape of the neck, and back. It is not generally attended with violent fever, headache, delirium, or coma, rarely vesicates, and seldom or never ends in suppuration. Setting out from the median line at the nose it spreads over both the malar prominences, descends over the cheek, sometimes leaving the upper lip untouched, and arriving at the edge of the lower jaw, its downward course is arrested, and leaving the fore part of the neck free, it begins to spread in the opposite direction, engaging the eyelids, forehead, and temples. It does not in general attack the upper or under lip, or the tip of the chin, and this, with its sudden arrest at the edge of the lower jaw, gives to the face a very peculiar appearance. In this and similar instances much interest has been excited among you in watching whether the disease, in its descent along the face, would, contrary to my prediction, reach the front of the neck by way of the skin covering the lower jaw; as yet we have not seen it do so, which is a most curious and inexplicable fact. Having spread over the cheeks down to the lower jaw it then changes its direction, quits the median line still more, and proceeding laterally by the temples, ears, traversing the mastoid process, it arrives on the back of the neck. About this period it not unfrequently throws out little detached patches, which appear, as it were, insulated in the vicinity of the main track. Having arrived at the interscapular space it sends off wings on either side towards the shoulder, passing over the latter and under the axilla, and descending along the back generally stops there on the loins. It never spreads equally before and behind, but occupies the back and shoulders in some, while in others it proceeds from the nape to the front of the neck, and thence to the sternum and anterior part of the chest. Occasionally it reaches both arms, but rarely, if ever, goes beyond the insertion of the deltoids; as it advances, its progress, and the extent of surface which it involves, become every day increased, while, at the same time, the redness declines. It extends much more rapidly in the latter direction than along the median line, and generally occupies about a fortnight in its advance. As I have observed before, it does not spread merely by continuity of surface, but often throws out little detached islands, and this is the reason why we cannot arrest this form of erysipelas by means of nitrate of silver. If you draw a line before it with nitrate of silver, it undermines, as it were, your line, and appears on the other side without any apparent retardation of its march. Having gone on in this way for a certain space of time, varying from seven to fourteen or seventeen days, and embracing a larger portion of skin on each successive day, it suddenly ceases, its cessation being in general accompanied by increased secretion from the skin, and abatement of the feverish symptoms. No author has noticed the very remarkable fact that the last day's march of erratic erysipelas is, in some cases, its longest—it is, if I may use the expression, a forced one; it then stops suddenly. But although the extent occupied daily thus increases until the moment the disease terminates, yet, for some days before that event, the parts newly seized are less and less intensely red, and on the last day, during which the greatest progress or *longest march* as to extent is made, the skin is but slightly

tinged by the erysipelas. In other cases the progress of the erysipelas is different, and, as it approaches the period of its termination, its daily progress exhibits a daily diminution, both in extent and intensity. In a lecture, formerly published, I have spoken of the treatment of this form of erysipelas. Wine and quinine agree well after the first few days from its accession.—*Ibid.*

29. *Case of Chorea—administration of Stramonium and Turpentine—Cure.* By Professor GRAVES.—There is an extremely interesting case at present in the chronic female ward; I allude to the girl labouring under chorea. Mary M'Donnell, now 16, well made and generally enjoying good health, has had several attacks of chorea. The first commenced seven years ago, and was attributed to fright. It was accompanied by aphonia, and lasted for some weeks. About three years since she was under Dr. Stoke's care, for a similar attack, but without any loss of voice; was leeches over the spine, and dismissed cured, after a seven weeks' stay in the hospital. On her last admission she was found to labour under chorea in an aggravated form, having involuntary motions of almost all the voluntary muscles, including those of the face and tongue, the motions being rather increased at night, and depriving her of sleep. She had no headache or pain in the back; the heart's action was quickened, but normal; the pulse 108; bowels constipated; tongue slightly furred; considerable flatulence. The catamenia appeared about eighteen months ago, and have continued regular. This last circumstance is calculated to diminish, very much, the importance attached by some persons to menstrual irregularity as the cause of chorea. Here the menses were quite regular, and yet the symptoms of chorea were of an extremely aggravated character. Besides, the occurrence of the disease in males, and before the age of puberty in females, is quite sufficient to show that the derangement of the menstrual function cannot be classed among the causes of chorea. In the case of a young lady, whom I attended some time ago, with Dr. Marsh and Mr. Mulock, the recovery was complete, and yet the menses did not appear until five months afterwards. I may observe, too, that in the case of this girl M'Donnell there is no reason to suppose that the disease depends upon subacute or chronic inflammation of the brain or spine. It is essentially a disease of the nervous system, but there are no grounds for inferring that it is connected with inflammatory action. Chorea has been defined as consisting of irregular motions of the voluntary muscles, continued while the patient is awake, interfering with and deranging the efforts of volition. It bears some analogy to paralysis agitans, subsultus, delirium tremens, and similar diseases, but differs as to its cause, the period of life at which it appears, the state of the sensorium, and many other particulars. It generally ceases during the hours of sleep, and in this way the system is enabled to recruit itself when fatigued by long continued muscular action; but in the case of this girl the movements are increased at night, adding greatly to the distress of the patient, by depriving her of rest. The day after her admission she was ordered to take aperient medicine, to have her head shaved, and use the tepid affusion three times a day. Under this treatment some transient relief was experienced; the irregular action of the muscular system ceased for about half an hour after the affusion, but returned again, and the disturbance of sleep remained undiminished. The tepid affusion was tried with great care and perseverance, and totally failed, which is remarkable, when we recollect how extremely efficacious it proved in the case of the young lady before spoken of, and whom it saved from the most imminent danger. This is a proof, if proofs be wanting, of the vanity of hoping that we can find any remedy capable of always producing a given effect on any nervous disease. The patient was now ordered to take thirty drops of the solution of muriate of morphia, twice a day, and this proving ineffectual, the dose was increased to forty drops. This treatment was continued for three days without any benefit; on the contrary, the irregular motions became more violent, and the state of watchfulness unaltered. She was now directed to take, three times a day, a pill containing the sixth of a grain of extract of stramonium, followed by a draught containing a drachm of spirit of turpentine. This was on the ninth; on

the tenth she is reported to be much improved, and to have slept for some hours during the night. Her pupils, however, were greatly dilated, so that it was thought advisable to discontinue the stramonium for some time. On the twelfth she was able to resume the use of stramonium of which she took four doses in the day, with marked improvement in her symptoms. The spasms were notably diminished, and she was able to enjoy four or five hours' comfortable sleep at night. The effect of the stramonium and turpentine was very striking, and the rapidity with which ease and comfort were induced, in place of inquietude and suffering, excited much surprise among you. I now regret, that in consequence of having given the stramonium and turpentine simultaneously we cannot, with certainty say to which the cure was owing: as the stramonium was also given in the other successful case, it is possible that it may have been the chief instrument of cure in both.

A question arises here, whether we could have effected a cure, in this case, by tonics? I think not; where the nerves of the whole system of voluntary motion are deranged, we cannot expect to derive much good, at least in the commencement, by the use of tonics. The remedies in which we can place most reliance, in such cases are those known to possess the power of controlling spasmodic action. Among them, musk, turpentine, and stramonium hold a very high rank. You are all aware of the benefit derived from musk in the treatment of subsultus; it has been long used for this purpose, and it deserves the reputation which it holds. Turpentine is another remedy of great efficacy in convulsive affections; in epilepsy, in the convulsions of children, and in the subsultus of fever, I have frequently employed it with advantage, and can bear ample testimony to its value; but, as I said before, I think that, in the present instance, the improvement is to be attributed chiefly to the stramonium.—*Ibid.*

30. *Chorea in a man seventy-two years old.*—Professor GRAVES, states in one of his clinical lectures that he was attending a medical man seventy-two years of age labouring under chorea, of the greatest possible degree of violence.—*Ibid.*

31. *Turpentine in the Treatment of Tænia.*—Professor GRAVES relates the following curious case in a recent clinical lecture. “A gentleman of my acquaintance who laboured under tape-worm, and had taken a variety of remedies, among others spirit of turpentine in the usual doses, was advised to try a very large dose of the spirit of turpentine. He took three ounces at once, and nearly killed himself; the turpentine produced the most violent irritation of the bowels, hypercatharsis, and intense excitement of the nervous system. He suffered for a long time from the effects of the dose, and to add to his misfortune, it failed of accomplishing the end for which it was taken. About half a year afterwards, while still labouring under symptoms of tape-worm, he was persuaded to try turpentine again in half drachm doses twice a day. He continued this for a considerable time, until the system became, as it were, saturated with the turpentine, and then began to pass portions of tape-worm daily, until the whole came away and he recovered completely. Here, you perceive, small or alterative doses succeeded, where an enormous dose had failed.”—*Ibid.*

32. *Hooping-Cough.*—*The Dublin Journal of Medical Science* for November, 1838, contains an interesting letter from Dr. H. C. LOMBARD, of Geneva, to Professor Graves, on this disease. Dr. Lombard states that the hooping-cough has been prevalent at Geneva during the past winter and spring, which has afforded him an extensive field for observing this complaint.

The *symptoms*, he states, were the same at Geneva as elsewhere. It “generally began in a slight catarrhal affection, with a short, dry cough, which, instead of becoming less and less, increased from day to day, and after a period of two or three weeks, became quite convulsive. This first uncharacterized period has sometimes lasted six or eight weeks, and sometimes has been totally wanting, so that the patients had in the space of a few days the convulsive cough; but the most general occurrence was a short, dry cough, for two or three

weeks, and afterwards a regular fit or paroxysm recurring from ten to fifty times a day. The fit or paroxysm was most generally divided into two distinct parts, with an interval, during which the patient could breathe easier, and have a few seconds or minutes of rest. It was generally preceded by a great state of anxiety, which lasted from five minutes to half an hour; the little patients used then to cry, and were very much agitated: older patients used to announce their fit a long time before its appearance, and they were troubled sometimes with a difficulty of breathing and sometimes with nausea. In a young girl aged seven years, the nausea was so intense before the fit, and lasted so long, that the only period of rest which she enjoyed, was that which followed the fit, and even that was of short duration. Sometimes, however, those precursory symptoms used to vanish, and were not constantly followed with a regular fit of whooping-cough; and I have chiefly remarked this favourable result when the patient's attention was directed to some interesting object, or attracted by conversation. The mucus expectorated was generally viscid, whitish, and transparent; sometimes, however, I have found it in the latter period yellowish and even greenish. I have not met with many cases of swelling of the face in the most violent attacks, and I have reason to think that this symptom, which has been considered as constant in the whooping-cough, is by no means a usual attendant of this disease; and the more so, as I have seen during the last winter two cases of simple catarrhal affections in children, who had the swelled appearance of the face which has been considered as characteristic of the whooping-cough. I have often met with profuse hemorrhages from the nose; but they have never been attended with any danger; on the contrary, they seemed to relieve rather than to increase the violence of the symptoms.

"Nausea and vomiting, chiefly the last, were amongst the most constant symptoms observed in my little patients; some of them have seemed for weeks to have thrown up all that they had swallowed, and yet they were not much emaciated; so that I am disposed to think that the very effort of vomiting presses down the pylorus a certain part of the food, and gives an aliment to the absorbents. This supposition appears to me corroborated by what happens in pregnant women, who during many months seem to vomit all they have swallowed, and yet are not much emaciated, at least not so much as they should be, were they to retain no food for the process of nutrition. The tongue has generally been white and furred in most cases, and yet the little patients have generally longed for food, and taken it with great pleasure. The bowels have generally been as regular as they are in children of the same age and constitution."

The average *duration* of the disease, Dr. L. states, was from seven to eight weeks; in some cases it did not exceed three or four weeks, but in others it was protracted to as many months. He has heard of cases which lasted twelve or eighteen months, but doubts the correctness of the fact. He has not found weak or debilitated children more subject to violent fits of the whooping-cough, than strong and healthy boys or girls; and the only cause of an increased cough has been the presence of many patients in the same apartment.

The *progress* of the disease was very irregular. The first period was sometimes entirely wanting, at other times it has been much protracted; the second period, during which the cough had attained its acme, has been often very short, while the period of decrease lasted a long time. In most of his patients, Dr. L. observed a temporary return of the cough, which seemed as violent as at first; but this relapse, though frequent, was never of long duration, and after two or three days, the regular decrease continued its course. The fits of coughing were observed day and night: during the period of increase, the fits were more frequent at night, and during the decrease more frequent during the day. This is explained, in part, by the cough being so violent during the first stage as to awaken the patient from the soundest sleep, while, when the fits are weaker, they do not awaken the patient. It is very likely, also, Dr. L. thinks, that motion, amusement, and the open air, contribute to lessen the cough; while rest, the horizontal posture, and the close air of sleeping-rooms, increase the tendency to the return of convulsive cough.

Dr. L. did not meet with a single well authenticated case of secondary whooping-cough; and he says that what may have induced some authors to admit its occurrence, is the peculiar prevalence of a convulsive cough amongst adults, during the existence of the whooping-cough.

The only *cause* which Dr. L. admits for the whooping-cough, is its transmission by contagion; the proofs he adduces of this assertion are the following:

“In most families where one child was attacked, all the others followed at a short interval. In the schools the transmission has been rapid and general; and in the town of Geneva we have traced the first cases as having caught the whooping-cough in a neighbouring town, where it had been introduced by a sick child arrived from another country. The only exceptions to the transmission of the whooping-cough to members of the same family, has been observed on infants who were suckled; and it is a popular opinion in the United States, that infants at the breast will not catch the whooping-cough. I was attending, last winter, an American family consisting of five children, who were all attacked with the convulsive cough except the youngest, who was not weaned till the complaint had entirely subsided in the family.”

Dr. L. agrees with the best informed practitioners in regarding whooping-cough, without any complication, as not a dangerous complaint. He has never seen a single case of the whooping-cough end in death, unless attended with some other disease. The various forms of complication he has met with are, bronchitis, pneumonia, anasarca, water in the brain, remittent fever, and a disordered state of the bowels.

“The inflammatory state of the bronchia,” he observes, “is a frequent complication of the whooping-cough; it is generally attended with a short cough between the fits, and with much fever and agitation; there is generally much uneasiness before and after the fits, and this uneasiness is caused by the difficulty of breathing, and pain felt in the chest. The bronchial inflammation runs easily into pneumonia, and both are frequent complications of the whooping-cough. Most of those cases that terminate in death, are attended with inflammation of the lungs; however this is chiefly to be met with in children who are not properly taken care of; and in the higher ranks of society I have not seen one single instance of this cause of death; indeed, so great is the difference in the mortality of the various ranks of society in consequence of the whooping-cough, that I may fairly assert, that out of ten fatal cases, nine belong to the poorer classes. I have seen this difference in my own practice, which since the last four years has become more respectable, and the consequence has been, that while in 1833 I had lost four patients, in 1838 I have not lost one, though my little patients have been twice or three times more numerous; but they, almost without exception, belonged to the higher classes. Anasarca is one of the frequent complications of the whooping-cough. In most cases there is a slight degree of œdema on the face and arms, but in some more serious occurrences the serous effusion in the cellular tissue and in the cavities extends to such a degree as to cause death. I have not met with such cases in my own practice, but another physician of this town has described to me three cases which have proved fatal, with symptoms exactly similar to those of the dropsy which follows scarlet fever, and in none of the three patients had this complaint been observed, or likely to have taken place.

“Water in the brain is one of the most serious complications of whooping-cough, and it is not a rare one. The cause of hydrocephalus is easily found in the constant trouble of the circulation during the spasmodic fits of cough; the face becomes then purple, the nose bleeds, and all the veins are swelled to such a point that they seem likely to burst; this intermittent stoppage in the brain circulation is a frequent cause of hydrocephalus in children labouring under the whooping-cough. But besides the above mechanical cause, there is also some great disposition to serous effusion of the ventricles which may depend upon the nature of the convulsive cough; this complaint has undoubtedly its seat in the origin of the nerves, and consequently the brain is originally affected; so that it is not to be wondered at if it induces so often the formation of water in the

brain. The only difference which I have been able to trace between the spontaneous hydrocephalus and that which comes in the course of the whooping-cough, is the different state of the bowels, which are not so costive in the last as in the first. But a greater number of facts is necessary to make it a general rule.

"I have often met, in patients labouring under the whooping-cough, with a continued or remittent fever; it was sometimes attended with shivering, hot skin, and night perspirations, so as to resemble consumption. Sometimes the fever is constant, and lasts for days and weeks. I have seen such cases where it was impossible to find the cause of the continuation of fever. The chest, examined with the greatest care, did not show any inflammation of the lungs or of the heart; the stomach and bowels were in very good order, and after the strictest search, I was obliged to consider this frequency of the pulse and heat of the skin, as caused by some obscure local inflammation. So serious was one of these cases, that it terminated fatally, and unfortunately I could not obtain permission to examine the body.

"The stomach and bowels are generally in good order during the whooping-cough; but in some rare cases, I have met with a loaded tongue, nausea, and loss of appetite, and in such occurrence gentle aperients succeeded in doing away with this complication. Often have I seen diarrhoea, but it has never been of much consequence, though sometimes attended with fever."

Dr. L. gives the following table of the ages of the patients in forty cases in which whooping-cough proved fatal:

Under 6 months,	-	-	-	6	} 13
From 6 to 12 months,	-	-	-	7	
From 1 to 2 years,	-	-	-		10
From 2 to 3,	-	-	-	-	6
From 3 to 4,	-	-	-	-	7
From 4 to 5,	-	-	-	-	2
From 5 to 6,	-	-	-	-	2
Above 6,	-	-	-	-	0
					<hr/> 40

This table the author thinks leads to the very important fact of the danger of the whooping-cough in infants, and the decreasing mortality of this complaint as children grow older. These conclusions seem wholly gratuitous, inasmuch as the number of cases occurring at each age is not furnished, and, therefore, there are no data for determining the relative mortality at different ages. The result, moreover, is at variance with the general observation of English practitioners.

Dr. L.'s observations on the treatment of the complaint, we shall transcribe in full.

"The treatment of whooping-cough has," he observes, "at all times, much occupied the attention of the profession, but so various have been the results of experience, that each practitioner advises a remedy as far superior to the practice followed by others; and so much has this path been followed, that we have now a long list of unfailing specifics which have done wonders in the hands of their inventors. And yet, after all, I come to advise a new treatment for this complaint. I have also my specific, and I give it to the public with as much confidence as any of my predecessors. However, I am not so exclusive as to have tried only one method, and I will give the result of my experience on those which I have followed with care and attention.

"Emetics are rather a matter of course than of choice in infants and children, who, being unable to expectorate, swallow all the mucus formed in the bronchia; it is also necessary to give a certain activity to the expiratory muscles, and in that also emetics are useful. I have given these every day, or every other day, and have always found it as good to unload the chest as an aperient for the bowels. They are also useful as a preparatory measure for some remedies which act better when preceded with emetics. The syrup of ipecacuanha has been used nineteen times out of twenty; when some

particular reason prevented its administration, I have given the powder of ipécacuanha, or even tartar emetic, which, however, does not agree so well with young children as with adults.

“I have made a great use of assafoetida both internally and externally. Rubbing the spine with the tincture has often been of great service, and a plaster applied on the chest has helped the actions of internal remedies. I have sometimes given assafoetida in pills, but few have been the instances of the children who could swallow this truly named *stercus diaboli*. The flowers of zinc is a very good antispasmodic in whooping-cough: in 1834, I have made great use of it, in the dose of four to twelve grains a day, and I must say that I have often succeeded in making the fits less and less. I have seen complete cures accomplished with that single remedy. In two very young infants who had a convulsive cough, attended with symptoms resembling epilepsy, the oxid of zinc has proved very beneficial, and has stopped the cough and the spasmodic fits. I have never seen any bad consequence from the use of this remedy.

“Opium, in various shapes, has enjoyed at all times a great favour in the treatment of whooping-cough. The chief preparation which I have used is the syrup of white poppy, in the dose of a tea-spoonful once, twice, or three times a day. In some cases, it has taken away the most troublesome symptoms, but without shortening the duration of the disease. In those cases in which it has proved beneficial, it has diminished the number of night fits by making the sleep sounder; but even then it seemed to have little action on those which came during the day.

“I have often given prussic acid, and in cases similar to those in which the opiates were indicated, viz. when there was much irritation, and a great variety of nervous symptoms. I have generally given half a grain, and sometimes as much as one grain of the hydriocyanuret of potash in the twenty-four hours, but I have never dared to give a larger dose of a poison like prussic acid. Employed comparatively on a brother, whose sister was taking the sub-carbonate of iron, this last remedy had a most undoubted advantage.

Belladonna, in extract or powder of the root, has very often succeeded in cases of whooping-cough. I used to give from half a grain to two grains of the root, and in many cases with advantage; however, though the cough was less troublesome and the fits less numerous, yet it seemed more to act as a palliative than as a curative remedy, and in many cases it certainly failed and proved quite inefficacious.

“I come now to my specific, or rather to the remedy advised by Dr. Steymann, as the best anti-spasmodic in whooping-cough. Dr. Steymann had advised to give from four to ten grains of sub-carbonate of iron in the twenty-four hours; he gave as a rule to increase one grain for each year, so that a child six years old was to take six grains in the day; but from the beginning I found that dose quite inadequate, and I increased it to twenty-four, and even thirty-six grains in young children. I have given it either with water and syrup or mixed with a cough mixture. It has never produced any inconvenience; on the contrary, I have found that all the children treated after this method were much less weakened, and recovered faster than with all other remedies. The proofs of the advantageous effects of the sub-carbonate of iron have been so numerous that I can scarcely enter into the detail; however, I may give a few facts to corroborate my assertion. In a child, four years old, I gave the sub-carbonate of iron, and the fits which in the preceding week had been 101 in number, were reduced to 66 in the following week. In a weak and debilitated boy, aged seven years, the powder of belladonna had proved quite useless; when I tried the powder of iron, so prompt was the effect, that in a few days the boy was quite cured; the sister of this boy was also cured with great rapidity. A young girl, aged eight years, had eight fits in the day, and after a fortnight they were reduced to two or three very mild fits of cough. A boy, aged six years, having thirty fits of convulsive cough during the day, when he began the sub-carbonate of iron, after one week the daily number was reduced to twenty-one, and in a fortnight to eleven or twelve fits, much less violent than they were before the treatment. One of

our best apothecaries had tried various remedies on his children, who were labouring under a violent attack of hooping-cough, when I advised him to try the sub-carbonate of iron; the result was far beyond his and my expectations, as after three days the night fits ceased entirely, and those which occurred during the day were reduced to three or four. The last case of hooping-cough which I have treated lately was of four months' duration, and every thing had proved useless, when I gave the iron powders, which in the space of a few days succeeded in making the cough less and less.

"In fact, I think I may assert with security, that the subcarbonate of iron enjoys a remarkable property to make the fits less violent, to diminish their number, and after a certain number of days to cure entirely the hooping-cough. It enjoys, besides, the advantage of strengthening the little patients, and to give them the force to resist a complaint which sometimes lasts some weeks, and generally leaves the patients weak, low, and exhausted. In some of those who have taken it, I have often seen during the first days a temporary increase of the cough, but it always subsided after two or three days, and did not prevent the good effects of the medicament. The good effects obtained by the use of the iron powders are easily explained by its antiperiodic and anti-neuralgic properties, and it shows *a posteriori*, how much the hooping-cough resembles a true neuralgic, or at all events a true nervous disease.

"Before concluding this long letter, I must not omit to mention the remarkable effects of a change of air; indeed, and striking is the fact, that it is now a popular remedy, and many have been the instances which have proved to me that this opinion is founded on a sound observation. In many cases which had baffled all attempts to stop the cough, a change of air has accomplished the cure. I have found it equally indifferent to go out of town or to come into town, provided there is a change; and even at the short distance of half a mile, I have seen the good effects of this plan of treatment. In many cases I have remarked that during the first three or four days the change of air increased the cough, which became afterwards much less, a remark similar to that made after the use of sub-carbonate of iron."

33. Beneficial Effects of Belladonna in a Case of Puerperal Mania. By DAVID H. SCOTT, M. D.—A lady, the mother of four children, was confined of her last in April of the past year. Since her childhood she had been constitutionally nervous, and partaking of an hereditary excitability. About two months previously to the full period of gestation, she began to express a conviction that she should not recover, and, in spite of all persuasion, this increased. But her labour was favourable, and she went on well until the evening of the seventh day, when her husband found her sitting up in bed reciting, with astonishing rapidity and accuracy, several parts of scripture, and hymns, many of which she had learned in her childhood and which had apparently been forgotten by her, as she was never, on any occasion before, known to repeat them, neither could she when requested to do so. She was quite unmanageable, scarcely recognized any person at her bed-side, answered incoherently the questions proposed, dwelt constantly on the idea of death for which she fancied she had been so actively preparing, and though her medical attendant was instantly on the spot, it was with much difficulty he was able to apply his measures. Active purging had a beneficial effect, it relieved the urgency of the symptoms. At this time she was attacked with mammary abscess and had been prohibited nursing the child. Her nights were now sleepless; opium was largely administered to give repose. She became abstracted, and shunned all society; a melancholy, with occasional paroxysms of high excitement, seized her mind; to those whom she dearest loved she showed the strongest dislike, and abandoned herself to despair and to utter ruin, an object unworthy of the compassion of her Creator. Leeches, occasional purgatives, change of scene and air, regulation of the secretions which were greatly vitiated, the shower-bath, were employed with partial and indifferent benefit. But at the end of October there was an evident change, the intervals of active excitement became longer and her manner more

rational; she began to feel a pleasure in occasional conversation, and the cautious introduction of visitors seemed to draw her attention to other objects than the delusions which haunted her. Dr. Scott now inserted a seton in the nape of the neck. It only rendered her unmanageable and was withdrawn. Thinking that direct action on the nervous system might be serviceable, Dr. Scott combined with perseverance in the use of purgatives, a pill composed of half a grain of extract of belladonna to be taken every night.

The effect of this treatment was highly satisfactory, her nights were visited with refreshing sleep, her skin, which had been parched from the onset of the illness up to this period, became moist, symptom after symptom improved, and, at the end of six weeks, her eye lost its vacuity, her countenance wore a contented and intelligent expression, her mind was calm, collected, and happy, and her feelings so altered, when contrasted, as she expressed it, with her past wretched and dismal state. The belladonna was employed up to the period of her permanent improvement, which was toward the end of December, when, to use the language of her husband, "she was as well as she had ever been during her life."—*Dublin Journal*, July, 1838.

34. *New Method of treating certain Cases of Epistaxis.* By Professor GRAVES.—It not unfrequently happens that epistaxis constitutes the only ailment to which young persons are liable. I was consulted by two gentlemen within the last year, the one eighteen, the other twenty-eight years of age; they were both healthy in every other respect, and were both liable to bleeding from the nose, sometimes slight, sometimes copious, and then producing a degree of debility proportionate to the extent of the hæmorrhage; no disturbance of the digestive organs, of the heart, or of any viscus or function was discoverable. There seemed to be but one defect in the constitution, scarcely explicable except on the somewhat mechanical hypothesis of a superabundance of blood, accompanied, perhaps, by a defect in the process of sanguification, whereby the blood's fluidity was altered. These ideas, borrowed from the now antiquated humoral pathology, served to indicate the method of treatment; and having no better guide to follow, I proceeded to put the plan thus suggested into execution: I accordingly advised my patients to live as dry as possible, or, in other words, to restrict themselves to a minimum of drink. I directed them at the same time to take about half a drachm of dilute nitric acid daily, in divided doses. Although the reasoning which led to its adoption is scarcely tenable, yet the remarkable success of the treatment renders the result worth recording.

Hippocrates, in his curious and instructive work on diet, insists much on attention being paid to the quantity of drink allowed to patients in different diseases; it is singular, however, that he nowhere speaks of restricting the quantity of drink in cases of hæmorrhage.—*London Medical Gazette*, Nov. 1838.

35. *Dry treatment in Catarrhal Affections.* By Professor GRAVES.—Dr. Williams has lately recommended the dry treatment in catarrhal affections of the lungs attended with increased secretion. In young persons, when the sputa are abundant and easily gotten up, I can attest the efficacy of an almost total abstinence from drink. Not long ago, I was called to see a young lady then on a visit to the house of the venerable Doctor Perceval; she had been blistered, and had taken large quantities of squills, ipecacuanha, antimonial wine, and other expectorants, and had refrained from solid food, and indulged freely in demulcent ptisan, whey, tea, &c.; these means, with confinement to her room, had been continued about a week without the slightest benefit; the cough was incessant, depriving her altogether of sleep, and accompanied with much wheezing, and an abundant easy expectoration. All remedies were laid aside, an almost total abstinence from drink observed, and a strikingly rapid cure effected. *London Medical Gazette*, November, 1838.

36. *Method of preventing Chilblains.* By Professor GRAVES.—Many persons,

especially children, suffer much from chilblains, although this troublesome affection is often met with in the most healthy constitutions; yet, when the disease proceeds to a very great extent and degree of intensity, and occurs with violence, where the exciting cause, exposure to changes of temperature, has not been sudden or remarkable, we may then conclude that the sufferer's diathesis is decidedly scrofulous. This affection ought consequently to excite the attention of parents; for although in general it is merely a local ailment, yet in some children it indicates a general weakness of the constitution, and in all occasions much pain and annoyance. In order to prevent the formation of chilblains, we must endeavour to protect the skin from the operation of the usual exciting cause of the disease, and, in addition to cautioning the children to avoid exposing their hands or feet to rapid transitions from cold to heat, we should endeavour to render the skin capable of bearing moderate changes of temperature with impunity. This is best effected by washing the hands several times a day, at first with tepid and afterwards with cold water, mixed with a small proportion of spirits or of *Eau de Cologne*. Some parents do much injury by making their children wear flannel or woollen gloves, even in the house. Stimulating liquids, such as strong brine, have long been deservedly popular as preventives of chilblains, and were recommended by Dioscorides; but none of those usually employed seem to me as efficacious as one which I was the first to use, viz. a solution of sulphate of copper in water, in the proportion of ten grains to the ounce. This must be diligently applied to affected or suspected parts of the skin with a camel's hair pencil; and as soon as the moisture dries off, the skin should be well smeared over with spermaceti ointment. The sulphate of copper lotion may be applied two or three evenings in succession, until it has produced a manifest effect on the skin; it must be then discontinued for a few nights—again, however, to be resumed as soon as the natural soft and tender texture of the skin seems about to return. You must be careful to enjoin the application of the spermaceti after each use of the lotion. By this simple plan, commenced early in winter, many children, previously martyrs to chilblains, have been completely protected. It is probable that the nitrate of silver would answer equally well, did it not discolour the skin in so unseemly a way.—*Ibid.*

SURGERY.

37. *Artificial anus following a hernia with gangrene; protrusion of a large portion of intestine through the solution of continuity.—Cure by autoplasty.*—The patient was a countryman, aged 52, who for a long period had been afflicted with inguinal hernia of the right side; and who, three years previously to coming under the care of M. BLANDIN, had suffered from strangulation of the part, which terminated in gangrene. Through the large perforation in the right inguinal region resulting from this, the interior of the cœcum was perceived, its anterior parietes having been destroyed, and from this opening the greater part though not all of the fæces was discharged. During three years the patient remained in this state, a portion of the intestine occasionally protruding through the opening, which he was always able at once to return by repose and compression on the part. In February, 1838, after strong exertions, so large a portion of intestine was pushed out that his own efforts to return it, as well as those of the physician of his village, were unavailing, and he travelled up to Paris for advice.

When first seen by M. Blandin “a reddened tumour of the size of the two fists, covered by mucous membrane, occupied the right inguinal region; vermicular movements were noticed at the surface of this tumour, and a lengthened opening, circumscribed by two lips, and readily known as the ileo-cœcal opening, was observed at its upper internal part. A constant discharge of liquid fecal matters took place from the opening. No evacuation from the rectum. Considerable emaciation.”

"Attempts to reduce the protruded intestine were at once made, which after being kept up for a long time, and pressure exercised in a continued manner for more than a quarter of an hour, were successful. *All of the ascending colon, the inferior extremity of the ileum, and the part of the cæcum* which had escaped the gangrene, were by this means reduced. After reduction it was ascertained that the opening in the abdominal parietes was nearly circular and sixteen lines in diameter. Compresses of a pyramidal shape, and a *spica* bandage, were applied to prevent a new protrusion."

"By these means the patient was much relieved, the fæces ceasing to pass by the anormal opening, and the intestine being retained by the pressure of the bandage. A truss with a strong spring and a large pad was afterwards applied, in order to produce a more energetic action upon the parts, and the opening was soon observed to contract. Nevertheless, by the month of May it was still as large as a dollar, and as it did not appear susceptible of greater contraction, on account of the loss of substance that had occurred in the abdominal parietes, an operation was thought of for the purpose of closing it. Previous to the performance of this, it was ascertained that the parietes of the cæcum which remained was either wholly deprived of an intermediate ridge, (*épéron*) or had one very slightly projecting, so that *enterotomy* was not applicable to this particular case. The edges of the wound were then pared off, and were united by means of the *quilled suture*, after having taken the precaution to place below them a piece of *fish's air bladder*, in order to hinder the fæces from irritating and preventing the union of the parts."

"This first operation, and a second of the same kind, were unsuccessful, and after a few days the patient was precisely in the same state as previous to their performance. Having thus found that something more than the simple paring off of the edges of the wound and the suture were necessary, autoplasty was resorted to, and applied in the following manner. A quadrilateral flap formed of the skin, and a thick layer of sub-cutaneous cellular tissue was cut below the opening in the groin: three different incisions served to circumscribe it, one of them being a tangent. From the inferior edge of the opening the two others descended perpendicularly to the extremities of the first; the flap was dissected up for the space of near two inches, and left adherent to the inguino-crural region by one of its edges. This first part of the operation accomplished, the skin covering the *superior internal and external* edges of the opening was removed for the space of about three lines, and the flap was then pushed up and its edges put in apposition with the before mentioned parts, placing thus the points of suture beyond the circle of the artificial anus, and covering this latter with the bleeding face of the flap. A piece of linen smeared with cerate, a layer of charpie, compresses, and a truss with a weak spring completed the dressings made use of after the operation. On the fourth day the flap was united with the edges, and with the anterior part of the opening within and without, but the union was not perfect superiorly; nevertheless, it was evident that if the success was not yet complete it would soon be obtained, for the flap kept from this period its position before the anormal opening, so that this latter was reduced to the condition of a narrow cleft, of which the edges could not fail to unite with a facility."

At the end of fifteen days the superior edge of the flap and the corresponding part of the opening were pared off and brought together by means of the twisted suture: this time the union was almost perfect, two little holes only remaining, which completely cicatrised after several cauterisations with the nit. argent. At this time (July) the patient has his artificial anus entirely closed by the flap taken from the groin. Upon pressing upon it the considerable loss of substance that has occurred in the parietes of the abdomen is plainly felt. The parietes are more feeble at this point than elsewhere, and it will be necessary always to give support to it by means of a truss.—*Gazette Médicale*, July 28, 1838.

38. *Arab Fracture Apparatus*.—At the sitting of the Academy of Medicine of Paris, held January 13, 1838, M. SÉDILLOR presented a fracture apparatus which he brought from Constantine, and which he had taken from a Turkish woman,

whose arm had been fractured by the bursting of a bomb-shell. This apparatus was composed of thirteen "*nervures*" of palm, each one inch wide, two to three lines in thickness, and nine inches long, convex on one surface, plane on the other, and arranged along and secured to a portion of prepared sheepskin; a space of three or four lines being maintained between them. This apparatus was supported upon the members by means of cords of wool loosely applied, but susceptible of constriction by twisting pieces of wood under them until the necessary force is given: in fact, a species of tourniquet. So arranged, this apparatus is perfectly applicable to simple fractures; but, in the case of the poor woman referred to, it was compound, and required dressing: to accomplish this without removing the apparatus, a portion of two of the splints, with the skin which covered them, was removed. Many modifications of this apparatus appear to be in use among the different tribes, and they are all ingenious. Certainly the contrivance which they employ to give to the apparatus the necessary constriction is worthy of remark; for it does not expose the member to any shock, and completely answers the end.—*Brit. & For. Med. Rev.* October, 1838.

39. *Immovable Apparatus for the treatment of Fractures.*—In the No. of the *British and Foreign Medical Review* for October last, there is an excellent account of the Immovable Apparatus for the treatment of Fractures, and a full and able exposition of its supposed advantages. Although we are not prepared to admit to its full extent, the writer's estimate of the value of this method of treatment, we do not doubt its utility in certain cases, and therefore subjoin copious extracts from his paper. "In 1834, M. SEUTIN, chief surgeon of the Hospital Saint Pierre at Brussels, finding several inconveniences attendant upon the use of the immovable apparatus for fractures, of Dieffenbach and Larrey, he was induced to seek some means by which the principle of those apparatuses might be carried out in a manner more free from objection; and such means was presented to him in *starch*. By means of this article an apparatus was easily procured, and not costly; it acquires considerable solidity, and a tenacity which enables it to resist perfectly external shocks; and, when its removal becomes necessary, it is easily accomplished without the destruction of any portion of the apparatus. From that time he has treated all cases of fracture, not only in the hospital, but in his private practice, by this method, with the most complete success.

"The mode of application of this apparatus is as follows: immediately after the reduction of the fracture, the limb is surrounded by compresses dipped in Goulard water; a common bandage is carefully applied over these, from the root of the toes to the knee, (supposing the leg to be the seat of fracture:) this bandage is then, by means of a brush, covered over with thick starch; then another bandage is applied, beginning at the knee and descending towards the foot: this is covered like the first, to which it adheres, except on either side of the tendo Achillis, where a little padding is applied. Four pieces of thick paste-board are moistened and moulded upon the leg, before, behind, and on either side of the fractured point: these are secured by two other bandages, one passing from the heel to the knee, the other from the knee to the heel, and covered by starch as before. From two to four days occur before the apparatus is perfectly dry; and from this moment the patient may get upon crutches, a support being given to the affected foot by a stirrup around the neck.

"On the 25th of September, 1837, M. Velpeau presented to the Academy of Sciences a memoir in which is discussed the two prevailing systems of treatment. He maintains that, whatever may be the nature of the fracture, whether accompanied by tumefaction or wounds of the integuments, reduction should be immediately proceeded with: this being accomplished, the part is to be surrounded by compresses, and a bandage moderately firmly applied, extending upwards from the points of the fingers or toes to the superior extremity of the fractured limb: the bandage is then to be brushed over with starch, and so on. The compression, being equal and moderate throughout, sustains the tissues, without occasioning the slightest uneasiness; the patient may turn, move, and act in bed as if there were only simple contusion of the leg. He is no longer condemned to

lie on his back for six weeks or two months; he may get up on the third day; he may, without inconvenience, sit on a raised seat, because the leg may be moderately flexed; he may walk with the assistance of crutches, the foot being sustained by a stirrup around the neck. M. Velpeau submitted to the inspection of the section of surgery, patients who walked on the second, third, fourth, and sixth day after the occurrence of the accident. It is admitted by M. Seutin that the principle upon which his system is framed is a simple, but certainly a successful modification of that of Larrey. It has been employed by him in about two hundred cases, with the greatest success; by Velpeau; by a considerable number of surgeons in France and Belgium; and by ourselves, in cases in every respect confirming the statements made in its favour by the persons to whom we have referred.

“We shall now shortly consider the objections which have been raised against the principle upon which the system is founded; and we shall hold that, at the present moment, the method is most perfectly carried out by the apparatus of M. Seutin.

“The principal objections which have been raised against this method of treating fractures are the following: If complete immobility be so necessary to prevent motion at the fractured point, this, it is objected, is often not attained, because from thirty to sixty hours are required for the complete desiccation of the apparatus, during which time motion may be permitted; and because, if, at the moment of application, the tumefaction be considerable, when that subsides, a large space will be left between the bandage and the limb; and there will be, therefore, no resistance to displacement. The answer which may be given to this objection is, that, when a fracture is reduced, it is not usually in the first two or three days that displacement happens; it is after this period, and when motion, involuntary or indispensable, is daily repeated, and the ordinary bandages have become loosened, that this occurs. Now, although humid, the starch apparatus maintains coaptation during the first three days, with at least as much firmness as the ordinary apparatus; that time passed, the danger of displacement is over; the pieces entering into its composition form a compact, coherent mass, exactly moulded upon the limb, adapting itself to all the inequalities of surface, and forming with it a perfect whole. A displacement, according to the axis or to the circumference of the limb, is completely prevented, because the superior fragment is included in the same mould as the inferior, and both must together be carried in any direction which is given to the limb; for no separate portion or fragment can possess the power of moving without the motion of the whole.

“If we move a lower extremity thus maintained, what happens? If an impulsion is given to the foot, the movement is transmitted to the leg, to the thigh, to the pelvis: no partial movement can occur, but the whole movement must be borne in the direction of the impulsion, and no displacement of the fragments can have place, because all are moved in the same direction at the same moment.

“Already many substitutes for starch have been proposed, with the view of removing the inconveniences with which the apparatus is charged. A composition of starch and alum, glue, pitch, and other substances, have been named. M. Lafargue has just detailed a case in which he employed a mixture of starch with gypsum in fine powder, in which the apparatus was perfectly firm in six hours. M. Velpeau at present employs, with the same view, dextrine.

“With respect to the second point, as to the space which may be left between the bandage and the limb, it usually happens that it is not considerable; it is not produced until after many days; the work of consolidation is then somewhat advanced; the ends are included in a callus which affords a powerful support.

“Supposing the apparatus to be placed on a limb which is much tumefied, and that tumefaction rapidly subsides, so that at the end of a few days a considerable interval is found to exist between the limb and the bandage, the inconvenience may be remedied by firmly applying another bandage. The solidity of the apparatus might be thought an obstacle to the action of the bandage, but experience has shown that the difficulty is not insurmountable.

“ Another objection which has been raised is, that the early application of a bandage, before the development of a coming tumefaction, may produce a strangulating effect. Experience has shown that the fears of gangrene, as a consequence of this pressure, are unfounded. When an ordinary bandage is too tightly drawn at the level of the fractured bone, whilst the lower or more distant portion of the limb is less firmly compressed, tumefaction follows, which, if the constriction be continued, will end in gangrene; but a pressure of an uniform character, extended from the toes or fingers, uninterruptedly, along the member, is opposed to the tumefaction of the parts and to gangrene: in fact, by such pressure, we may procure atrophy of the limb, but not gangrene. Therefore is it important that the compression should be exact and uniform; and, in a large majority of cases, its effects, so far from being injurious, will be found to be decidedly salutary.

“ In fact, there are two kinds of compression: the one which is opposed to the reflux of venous blood, (that, for instance, which we establish circularly around the arm when we wish to bleed a patient;) the other, which is opposed to the ingress of arterial blood and favours the egress of venous blood, is that of every agent which compresses a limb equally at all points, and commences by a methodical compression of the portion farthest removed from the trunk. The first determines gangrene when long continued; the second is decidedly opposed to inflammation: the first is as strongly repulsed by the advocates for permanent bandaging as by others; and the second must belong to that method properly employed. Still we would say that, where the tumefaction of the limb is very great, the application of the apparatus should be delayed for some days; not because pressure would exercise any baneful influence, but because, when the tumefaction is dissipated, too great an interval may be left between the limb and the bandage, and because some difficulty might be experienced in determining upon the exactitude of the coaptation.

“ Another disadvantage which has been attributed to this method is, that the practitioner is left in the dark as to the state of the limb; that, when once applied, it must there remain up to the moment of consolidation of the fracture; and that, before this period, we cannot ascertain whether there be eschars, abscess, or other similar complications. If only moderate attention be used, none of these accidents need occur: they must produce pain and general symptoms; and nothing can be easier than to remove the bandage. As far as strangulation is concerned, too, the extremities of the fingers or toes, which are uncovered, will always give timely indication of the approach of gangrene.

“ Again, it has been said that the bandage may produce excoriation and eschars, in consequence of the unyielding nature of its materials, against which the integuments may rub and become ulcerated. When we consider that the soft parts within the bandage remain perfectly immobile, and that the compression is exercised equally at every point, the apparatus being exactly moulded on eminences and depressions, we shall conclude that the occurrence of such accidents must be extremely unfrequent. Besides, the first layer of starch is on the outside of the bandage, and not in contact with the skin, and, even were it otherwise, the inconvenience might easily be avoided by interposing between the bandage and the limb any substance which, without preventing the necessary compression of the parts, would obviate such an inconvenience.

“ Such are the objections which have been urged against the treatment of simple fractures by this method: against the system, as applied to the treatment of fracture with wound of the integument, a more formidable objection has been made. It has been stated that pus is confined, and that the consequences are extremely injurious. The most conclusive answer which can be made to this objection is, that many hundreds of cases have been treated by this method, and that such consequences rarely occur. When the tumefaction is dissipated, and the period of suppuration has set in, the pus is poured out, penetrates the compresses, and gradually the different parts of the apparatus become impregnated with it. Some time is occupied in the production of this effect, and a multitude of facts clearly demonstrate that, beyond this point, suppuration very rarely proceeds. At first the purulent matter occupies the space left vacant by the

subsidence of the tumefaction, but its force of expansion proceeds no farther; the compressive power of the apparatus restrains it; there is no reflux, and infiltration of the integuments hardly ever takes place. It is, therefore, a new obstacle to the farther pouring out of purulent matter, which soon undergoes many changes; certain fluid portions are absorbed; and, being preserved from contact with atmospheric air, it does not contract those deleterious qualities which, under the influence of this agent, it usually acquires: the other portion extravasated between the integuments and the apparatus, and which pervades the latter, evaporates, leaving a concrete portion, which forms a stratum around the limb, which singularly adds to the solidity of the apparatus.

“Before we proceed further, we will refer to the apparatus of the Arabs; and, certainly, we cannot say less in its favour than that it is a true “immovable” apparatus, of easy application, more simple and effectual than that of Dieffenbach; little less so than that of Seutin.

“Those persons who have no fears with regard to the necessity of providing for the escape of pus, may urge the bad consequences of leaving the wound exposed, and of the less rapid cicatrization; and no doubt the introduction of that principle would be a most important improvement upon the Arab system. Certain it is their apparatus perfectly accomplishes the common indications in treatment; the fragments are maintained motionless, the member is submitted to a uniform compression, variable at will, without shock or disturbance: and, with respect to their arrangement when the fracture is compound, it must be admitted that, when the opportunity of examination is unfrequent, the course they take is the safest.

“We will now contrast, very shortly, the two systems of treating fracture of the lower extremity.

“The method commonly employed in this country requires a confinement to bed, in the same position, for a period varying between three weeks and as many months. If the patient be in robust health at the commencement of this treatment, it is damaged at the end; if he be debilitated, that debility is aggravated; if he be occupied in trade or any occupation requiring his personal attendance, it must suffer in his absence; if he be a traveller, where he falls there he commonly lies, whatever may be the inconvenience: if the fracture be compound, all these evils are aggravated; the patient may be pulled down by profuse suppuration, or his wound may be exposed to all the accidents to which such a surface is liable. There are also other considerations of much importance which belong to the subject: frequent watching is necessary, and this among the poor in rural districts is frequently impracticable. For instance, a man may be surgeon to a large union of parishes under the present administration of the poor-laws: three or four fractures may happen at different points of that union: it is impossible for him to give them all the necessary attention; and, though the fractured bone may unite, it is often at an angle. Under the other system, the necessary apparatus may be found in a cottage; it is of easy application; it is not irksome to the patient; tumefaction, when present, is more speedily dissipated; and, if it be not already developed, is almost constantly restrained; the patient may, under ordinary circumstances, be left with a conviction that all will go on well; and, when the union is accomplished, instead of being reduced, by confinement, to a debilitated condition, the patient is enabled, on the fourth or sixth day, to leave his bed; the tradesman to attend to his ordinary business; the traveller to proceed on his journey without risk; and, if the fracture be compound, the tendency to suppuration is restrained, and the injury rapidly reduced to one of a simple nature.”

40. *Treatment of Hydrocele by injections with Iodine.*—In our No. for Nov. 1837, p. 258, we noticed the success of Mr. J. R. MARTIN in the treatment of Hydrocele by injections of a solution of tincture of Iodine. Mr. M. has since communicated to the Medical and Physical Society of Calcutta a report of his subsequent experience—from which it appears, that since the 2d, January, 1835, (the date of his former report) 601 cases of hydrocele have been treated at the Native Hospital, making in all 777 cases since March, 1832. Of those 766 had

solution of tincture of iodine injected, and retained as formerly described. In order to ascertain whether it was by mere stimulation, or by any specific action that the cure by the tincture of iodine was effected Mr. M. had ten cases treated with a common urethra syringe of undiluted Port wine, and one with diluted tincture of lyttæ, in the same proportion as that of iodine, viz. two drachms to six of water:—of this two drachms were injected and retained; the pain during twenty-four hours was excessive, Mr. Martin states, and the inflammation, though not proportionate to the pain was much longer in subsiding than when the tincture of iodine solution was used:—this was also remarkably apparent in the cases treated with the undiluted Port wine.

Of all the cases treated (766) Mr. Martin says, only two cases of failure* have as yet presented themselves at the Native Hospital, and one of these had elephantiasis of the leg, with similar thickening of the scrotum, and in him the injection caused no pain; but a second operation wherein the pain was acute succeeded.—*Quarterly Journ. of the Calcutta Med. and Phys. Soc.* Jan. 1837.

41. *Fracture of the Fibula without malposition of the foot.*—Fractures of the lower third of the fibula do not always occasion malposition of the foot. Three cases have been admitted this year into the Hôpital de la Pitié, demonstrative of this fact. The subject of one was a man who fell his own height only. He was immediately deprived of the power to walk, and was taken to la Pitié. He was carefully examined by M. Lisfranc, who was unable to decide whether there was a simple sprain or a fracture of the fibula. The examination was daily repeated with the same result; and it was not until the ninth day that M. Lisfranc ascertained that there really was a fracture of the fibula. There was no displacement and no malposition of the foot.—*Bull. Gen. de Therapeutique.* Aug. 1838.

42. *Fracture of the Thigh-bone—defective union with distortion at the end of six months—subsequent recovery.*—The following case, related by Prof. SYME, in the *Edinburgh Medical and Surgical Journal* for Oct. last, is interesting as showing the length of time after the occurrence of fracture, at which art may sometimes interfere with advantage; indeed, so long as osseous union is not effected, there is room for beneficial practice.

“John Porteous, aged 27, had his right thigh-bone fractured about a third distance from the lower end of the shaft. He was treated by means of the long splint, under the care of a most intelligent and attentive practitioner, but probably from the difficulty of managing such injuries in close beds and inconvenient houses of country people, osseous union did not take place, and on the 4th of July, nearly six months from the date of the accident, the patient was admitted into the hospital.

“I found the fractured limb nearly two inches shorter than the other. The thigh was swelled and bent outwards, the portions of bone forming an obtuse angle at the seat of injury, and motion was distinctly perceptible between the broken extremities, when they were subjected to force urging them in opposite directions. With very little prospect or hope of success, I resolved to make an attempt for the patient's relief, and with this view applied a cushion of hair over the projecting extremities of the broken bone, then placed over this a wooden splint long enough to extend from beyond the toes up to the false ribs, and secured it firmly to the leg by means of a sheet, which after repeatedly surrounding it, enveloped the limb. The upper end of the splint was then drawn towards the pelvis, and confined to it by a broad belt, passing round both the one and the other.

“In consequence of the force thus exerted the thigh-bone was straightened, and the limbs became of equal length. The patient lay very quietly, and at the end of four weeks was relieved from confinement. The thigh-bone then was perfectly straight, and osseous re-union seemed to have been at length effected. The patient now suffers no uneasiness except from stiffness of the knee-joint, conse-

* Two more cases of failure came under the observation of Mr. Twining.

quent upon the long-continued extension of the limb. This defect, however, has not been increased since he entered the hospital, and, being only partial, will probably soon yield to warm baths and frictions.

43. *Fracture of the Pelvis from a slight fall.*—M. BOUVIER related to the Royal Academy of Medicine, at their meeting of 3d July last, an example of this occurring in a man 71 years of age, who, having drunk more than usual, fell from his bed. The patient remained for three weeks unable to walk, and never afterwards walked except on crutches. No fracture could be detected during life, but after his death some months subsequently, there was found a simple but complete fracture of the pelvis across the left ilium, from the ileo-pectineal eminence, through the middle of the acetabulum, to the spine of the ischium. The portions of bone were slightly moveable; the periosteum and adjacent cellular tissue were thickened and indurated in the neighbourhood of the fracture; and below them the bone was eroded and friable in several parts. The bones of the pelvis, with the exception of the alteration which had evidently followed the fracture, did not seem to have lost any of their consistence, so that if it were necessary to admit a fragility of the bones consequent upon old age, the change is probably less in the apparent structure of the osseous tissue, than in some modification of its intimate nature, the cause of which is as yet unknown.—*Bulletin de l'Acad. Roy. de Med.* Aug. 15, 1838.

44. *Dislocation of the Thigh-bone on the Dorsum Ilii.*—Prof. SYME has succeeded in effecting reduction in two cases of this form of luxation, one of nine weeks, and the other of six weeks standing. The first occurred in a man 36 years of age, of strong muscular frame; the second in a woman, 26 years of age, whose muscular system did not offer much resistance. In the first case, the patient, after losing sixteen ounces of blood, was put into the warm bath for an hour, a solution of tart. antim. then given, and the pullies finally applied. In forty minutes, reduction was effected.

In the second case, the patient was placed in a warm bath, and solut. tart. antim. administered; the pullies were then resorted to, and at the end of ten minutes, reduction was effected. In neither, was the extension maintained continuously, but completely relaxed from time to time, in order to fatigue the muscles, and disturb the patient's involuntary efforts to resist the exertions for their relief.—*Edinburgh Med. and Surg. Journ.* Oct. 1838.

45. *Rupture of the axillary artery—diffused aneurism—ligature of the subclavian—amputation at the shoulder-joint—recovery.* The *Edinburgh Medical and Surgical Journal* for October last, contains the following interesting case, communicated by Prof. JAMES SYME. A gentleman, 23 years of age was, on the 23d September, thrown out of his gig upon the road with great violence, and lighted on his left shoulder. "When taken up, he complained of pain and swelling in the arm-pit, and surgical assistance being immediately procured, it was at first thought that the humerus had been dislocated downwards. On more careful examination, it appeared that the bone was in its proper place, and that the hard tumour in the axilla, which had been mistaken for its head, depended on effusion of blood. The patient was kept quiet in bed, with cooling lotions applied to the injured part. For a day or two the swelling increased, extending down the arm, and the side of the body, and attended with discoloration of the skin. A gradual improvement then took place in the uneasy feelings as well as the external appearance. But on the tenth day after the accident, a sensation of gushing was felt in the arm-pit, and the pain and tension suddenly became as great as ever. Leeches were applied, and the case again proceeded favourably for eight days, when another gush took place. Attacks of this kind then became more frequent, and at length occurred almost daily. They were always relieved by leeches, of which about 300 had been applied. Mr. S. found the arm enormously swelled by œdematous effusion, which extended to the points of the fingers. A large fluctuating tumour occupied the axilla, and distended the pectoral muscle. There was no pulse at the wrist, and not the slightest

movement or sound could be perceived in the swelling. The patient, worn out by pain, loss of blood, want of sleep, low diet, and apprehension, was reduced to a state of extreme weakness.

"In these circumstances it seemed difficult to determine whether there was an axillary aneurism or merely a bloody effusion. The gushing sensation, and absence of pulse at the wrist were in favour of the former view, while the complete absence of pulsation and aneurismal *bruit* in the tumour, from its commencement and during the whole period of its existence, could hardly be accounted for, except by the latter explanation. The case being thus doubtful, and as pressure had not been tried, it did not appear prudent to resort to any operation until the effect of careful bandaging had been ascertained. A flannel roller was accordingly applied from the fingers to the shoulder, and round the chest.

"He derived great comfort from the bandage: the swelling of the arm was considerably reduced: and there had been no return of the gushing sensation.

"He continued in this satisfactory state for three days, but on the morning of the 24th, sent for me on account of severe pain in the most prominent part of the swelling. This corresponded with the hollow of the axilla, and formed a round prominent tumour of a dark-red colour, apparently about to open. The patient was impressed with the idea that matter had formed, and entreated me to make an opening for its escape. Thinking that a small puncture might be made with safety, I introduced the point of a narrow bistoury, and finding that nothing issued, enlarged the wound to the extent of half an inch, when a small clot of blood was squeezed out. Hoping from this, that there was merely a bloody effusion from the smaller arteries or large veins, I placed a piece of lint loosely upon the wound. Four hours afterwards, at 11 A. M. I changed the piece of lint, and a few minutes afterwards observed it wet with arterial blood, a jet of which immediately followed. By means of a pin thrust through the lips of the wound, and a ligature tied round it, I prevented further hemorrhage for the time, and then considered what was to be done, with Sir George Ballingall, and Mr. Dewar of Dunfermline, who happened to be in town. They concurred with me in thinking that the subclavian should be tied without delay, and this, with their assistance, was accordingly done.

"The elevation of the clavicle by the axillary swelling, and the condensation of the cellular substance consequent upon the ecchymosis, of which the discoloration extended from the neck to the hip, rendered the operation more difficult than usual; and the artery not only lay deep, from being on the left side, but was overlapped by the cervical nerves to a greater extent than I recollect of noticing in dissection. These obstacles having been overcome, the artery was exposed, and tied with a single silk ligature. The patient passed the remainder of the day tranquilly, and next day when I saw him in the forenoon seemed to be going on well. But at two o'clock, P. M. two or three ounces of blood escaped from the wound in the axilla, and a compress of lint was then secured over it by means of a spica bandage. At seven next morning, as the bleeding returned to somewhat larger extent, I stuffed the orifice with lint. At eleven A. M. it was thought right to lay open the cavity, turn out all the clots that could be reached, and apply graduated compresses. When the artery was thus exposed, it bled freely, but not with such force as to resist the pressure of the lint. In half an hour afterwards, however, the hemorrhage recurred, and as the temperature of the arm was then distinctly lower than natural, Sir George and I decided that the only remaining resource was amputation at the shoulder-joint.

"Drawing the patient to the edge of his bed, I readily removed the limb, and exposed to view a frightful cavity containing coagulated blood, extending as low down the side as the *latissimus dorsi*, and stretching forwards under the pectoral muscle. The artery appeared to have been torn across, immediately below the origin of the subscapular, through which the blood was flowing in a retrograde course; I tied it—the axillary—and one or two other vessels, scooped out all the clotted blood I could reach, and then stitched the edges of the wound together.

The patient, for several hours after the operation, threatened to sink under this final act of his trials. He complained of nausea, and was deadly pale; his face was covered with cold perspiration; and his pulse could hardly be felt. Small quantities of wine were given to him frequently, and in the evening he revived; feeling warm and comparatively comfortable; the pulse became firm and could be counted, 160. Next day it was 140; the day following, 120; and so on until it fell to the natural state. In other respects the improvement was equally progressive, and before the end of a week there was no room for anxiety except on account of the ligature above the clavicle. It was longer of separating than usual, but probably lay loose for some time before it came away, owing to the patient's extreme aversion to let it be touched. His recovery was complete both in regard to the wound, and the general health.

"The points in this case most deserving of attention are, 1. the way in which the artery was ruptured; 2. the absence of pulsation and aneurismal *bruit* in the tumour; 3. the inefficacy of tying the arterial trunk at a distance from the rupture and with the intervention of branches; and 4. The success of amputation in very desperate circumstances. Whether pulsation was prevented by the artery being torn entirely across, and whether ligature of the subclavian would have proved effectual if not preceded by puncture of the tumour, are questions which I leave to the consideration of the reader."

46. *Aneurism of the external Iliac artery—obscurity delaying an operation—mortification of the limb—ligature of the common Iliac, and amputation of the thigh—dissection.*—This interesting case is recorded by Prof. SYME in our respected cotemporary, the *Edinburgh Medical and Surgical Journal* (October, 1838.) The subject of the case was a thin, anxious, unhealthy-looking person, *ætat.* 31; by occupation a tailor. He stated that three months before Professor Syme's seeing him, he had perceived a beating tumour, the size of a pigeon's egg, in the right groin, which rapidly increased in size. A medical practitioner in the part of the country from which he came, prescribed fomentations, liniments, and poultices, with the view of hastening its progress to a proper state for being opened. As it rapidly increased in size both upwards and downwards, without becoming softer or appearing to approach the surface, leeches and mercurial ointment were next employed, and no benefit being derived from these means, poultices of potatoes were recommended.

"Having carefully examined the tumour, I came to the conclusion that it was an aneurism still within command by tying the common iliac artery, and advised him to go into the hospital. He did so, and in the case which I dictated next day to my clerk, it is stated that 'there is now a large tumour occupying the whole space between the pubes and the crest of the ilium, and extending three inches above a line drawn between these two points, and nearly two below it. The consistence of this tumour is tense and elastic; a very obscure pulsation may be felt at some parts of its extent; and the aneurismal *bruit* is very distinctly heard. The patient complains principally of pain in the knee.'"

Mr. Syme resolved to tie the common iliac artery; but it was resolved by a number of medical gentlemen who had assembled to see the operation, that it would be wrong to operate until the nature of the case became more distinctly manifested.

"After this, the tumour obviously enlarged, and acquired a more irregular nodulated surface—the limb became *œdematous*. The pain, in the knee too, which had been very severe, seemed now quite intolerable, not only rendering the patient completely sleepless, but inducing him to sit constantly in bed with his head bent forward, almost in contact with his knees; and his complexion, which had been always sallow and unhealthy, assumed more of the greenish-yellow hue attending malignant disease of the cerebriform kind.

"On the 6th June, the leg became cold, and on the 7th pulsation was felt distinctly throughout the tumour. On the 8th, I requested Sir Charles Bell, Sir George Ballingall, and Dr. Campbell, to consider what should be done. The pulsation left no doubt as to the existence of aneurism. But the tumour had

ascended to within an inch of the umbilicus. And the leg was not only cold, but of a bluish-purple colour from the knee downwards, with some large vesicles on the calf. It was plain that the mortification, if allowed to proceed, must prove fatal in two or three days at most. There was reason to think that room still remained for tying the common iliac; and that if this were done, the process of mortification might be stopped, by amputating the thigh. We therefore resolved that an attempt should still be made to save the patient's life.

"The external incision was between six and seven inches long, extending from a little above the external ring upwards in the direction of Poupart's ligament, but diverging from it with a slight curve inward. The parietes of the abdomen were readily divided, and little difficulty was experienced in turning back the peritoneum from the tumour, which was done cautiously to prevent rupture of the membrane on the one hand, or of the sac on the other. I felt the external iliac artery beating on the upper surface of the tumour, and traced it back until it became free, immediately beyond which the internal iliac came under the finger, and beyond this the common trunk lay quite free. So far the operation, however formidable, had not been attended with much embarrassment. But in proceeding to pass a ligature round the vessel, I found the narrow space which was all that could be gained between the unyielding convex surface of the tumour, and the peritoneum distended by the viscera, and which was nearly equal in depth to the whole length of my hand, rendered the employment of aneurism needles very perplexing and uncertain. Having tried several of different kinds, I at length succeeded in passing one of the simplest form; and then having the parietes of the cavity held carefully aside by iron spatulas, got a view of the ligature, and drew it out by means of a hook. A single firm knot was tied on the vessel, and one end of the thread cut away. The edges of the wound were stitched together.

"In the course of the day, the tumour became smaller and softer. The coldness and discoloration of the limb extended above the knee, and the patient complained of inability to retain anything in his stomach. On the 9th, he was in much the same state, with some tympanitic distention of the abdomen. On the 10th, he was no worse. On the 11th, amputation of the thigh was performed close above the discoloured part of the limb. On the 12th, the patient died.

"On dissection, we found the common iliac firmly tied, exactly at the middle point between its origin and bifurcation, without any inclusion or injury of the neighbouring parts. The vessel contained a clot above and below the obstruction. The peritoneum showed traces of much inflammation, but not general or very extensive. The nodular inequalities of the surface of the tumour depended on the glands of the groin, which were enlarged and elevated by the subjacent swelling. The aneurism was of great extent, occupying the triangular hollow of the thigh, and stretching up into the pelvis, so as to fill the cavity of the *ilium*, and even extend considerably beyond it towards the back. The ramus of the pubes was exposed and rough, and the capsule of the joint was nearly if not completely perforated by absorption.

"The external iliac and its continuation the common femoral artery lay intimately incorporated with the aneurismal sac, but remained quite entire except for about an inch at Poupart's ligament, where the coats of the vessel were deficient to this extent, on its inner or inferior surface."

47. *Club-foot treated by Operation.*—Dr. LITTLE has recorded in the *Lancet* six cases of club-foot, treated by division of tendo Achillis.

The *first case* was one of congenital talipes varus verus, affecting both limbs. The subject of it was a boy 16 years of age; the whole weight of his body was supported on the ball of the little toe, which was the only part which touched the ground. The patient's progression was, of course, extremely laborious and difficult. On the 11th April, 1837, Dr. L. divided both the Achilles tendons with a sharp-pointed bistoury. This instrument was passed through the skin, one or two fingers breadth above the malleolus internus, with one of its sides turned towards the tendon, the other directed towards the deeper muscles and the

tibial vessels and nerves: as soon as the point of the knife passed beyond the external edge of the tendon, and had nearly reached the skin of the opposite side, the knife was turned, so as to bring its cutting edge to press against the tendon, which was divided at one stroke in the act of withdrawing the knife. The limb was then secured in a pasteboard splint, so as to prevent motion, and the third day Stromeyer's foot boards were applied and extension commenced; at first very slightly, and the force gradually increased daily. On the 1st Sept. 1837, the patient was able to walk ten or twelve miles without difficulty.—*Lancet*, March 17, 1838.

The *second case* was one of talipes equinus acquisitus of right foot, arising from paralysis of the anterior tibial muscle, in a girl *ætat.* 14. The point of the foot only touched the ground, the heel being drawn up between two and three inches.

On the 16th August, 1837, the tendo Achillis was divided; on the 19th Stromeyer's foot board was applied, and very slight extension exercised; and on the 15th Nov. the patient was able to walk extremely well.

The *third case* was one of talipes equinus acquisitus verus, converted into talipes varus spurius, through having had to bear the weight of the body. The subject of it, was a boy *ætat.* 15, who until the age of two years was healthy, when he was attacked with typhus fever, during which he had a fit at night, which left him with his left arm and leg spasmodically contracted. The deformity of the foot has constantly increased up to the present time. With the assistance of a stick he is able with great difficulty to walk.

On the 26th February, Dr. L. divided the tendo Achillis. May 8, Dr. L. reports the patient as without any deformity, and as having often walked with comfort 8 or 10 miles a day.

The *fourth case* was one of talipus equinus acquisitus, from shortening of gastrocnemii, induced by the cicatrisation of extensive abscesses, which had extended in various directions among the muscles on the posterior part of the leg, accompanied by carious bones, particularly of the tibia. The subject of it, a girl 27 years of age, was attacked with some disease in her right leg, accompanied with abscesses, &c., when she was 7 years of age, and which continued for eight years; during which period she was necessarily prevented from walking. The heel, in consequence of this confinement, the superior power of the gastrocnemii, and the contraction of the numerous cicatrices, was drawn up to the utmost possible extent, and the patient was compelled to walk on the extreme point of the sole of the foot. There was no other deformity of the foot. The muscles of the back and outside of the leg were bound down to the bones by eight or ten, or a dozen large indented cicatrices, some of them more than three inches in length. There was a difficulty in dividing the tendo Achillis in this case. "The lowest cicatrice, uniting skin, bones, and tendo Achillis, approached so near to the insertion of the latter, into the os calcis, within an inch of it, and the distance between the anterior surface of the tendon and the back of the ankle-joint, which is occupied in a healthy limb, by yielding cellular tissue, appeared, from the thickening and induration around the tendon, to be filled up by a dense mass of organised lymph, showing that some abscess formerly extended thither. There was also the necessity of keeping sufficiently far from the bursa, at the insertion of the tendo Achillis upon the one hand, and the objection of traversing old cicatrices with the knife on the other." Nevertheless Mr. Little resolved to operate, and on the 7th September, he passed a straight French bistoury into the inside of the limb, "opposite to the part where the tendon was least engaged by the adhesions, as far from the anterior surface of the tendon as was compatible with the safety of the posterior tibial vessels, &c., one side of the knife being directed towards the latter. The cutting edge was then directed outwards, against the tendon, the point being made to describe a quarter or third of a circle, of which the centre was that part of the blade in contact with the external punctures. By this cutting outwards, and circular motion of the point of the knife, nearly all fibro-cartilaginous adhesions, for they were felt by me to be gristly whilst cutting them, between the edge of the knife and the skin, as well as the tendo

Achillis, were divided, as in the method I usually adopt for cutting the latter only, without any puncture being made in the opposite side of the leg. After the withdrawal of the knife two small remaining portions of fascia, or bands of adhesion, were felt through the integuments to be still unsevered; they were cut by re-introducing the bistoury. There was but one wound, a quarter of an inch in length, which healed immediately by first intention, the wound having been dressed and the limb treated as is described in the preceding cases."

On the sixth day Stromeyer's foot board was applied, without attempting much extension. After a few days the cord of the apparatus was slowly tightened, though with very little amendment. The patient complained of restless nights, and on the eighth day, Dr. L. found, to his disappointment, that the foot was nearly in the same position as before the operation; he was therefore certain that some unusual impediment to the bending of the ankle existed. On the eighteenth day after division of the tendon, when all swelling had subsided, Dr. L. was able to satisfy himself that there was a firm band passing from the os calcis, or from the inferior portion of the divided tendo Achillis, to the lowest cicatrix of the fibula; and he determined to divide this band. This he did after the manner of dividing the tendo Achillis, except that he introduced the knife upon the outside of the limb. The wound healed on the second day; Stromeyer's foot board was then applied, and the same degree of extension which had previously given much pain, was now borne with comparative ease, so that the patient was able to walk about. The heel gradually descended, and fourteen days after the second operation she was able to put the heel and entire sole to the ground; which she had not done for twenty years. The limb gradually improved, and at the date of the report, the patient is represented as being able to walk or dance as if the limb had never been contracted.—*Lancet*, May 26, 1838.

Case *fifth* was a lady *ætat.* 24, with talipes varus acquisitus of right foot. This patient, like the last, had had, nine years ago, numerous abscesses in different parts of back and outside of the leg, with necrosis of tibia and fibula. Several large pieces of bone were removed, and after suffering four years the abscesses healed. The gastrocnemii were, however, contracted, and the heel was drawn up two or three inches. She was placed under a mechanist of repute and an appropriate apparatus applied and continued for five years, without any other benefit than preventing the contraction from increasing.

Aug. 1, Dr. Little divided the tendo Achillis. The next day Dr. L. felt a small string or bridle remaining undivided at the part where he cut the tendon, this he divided by a very minute puncture. The fourth day, cord of apparatus tightened for first time. After this the extension was gradually increased, and in six weeks she was able to walk about in a common shoe, the ankle joint possessing the usual extent of motion.

The *sixth* case was one of talipes varus—the patient an adult. The tendons of the gastrocnemii, tibialis posticus and tibialis anticus were divided, and at the end of seven weeks the patient trod upon the entire sole and heel.

Dr. Little has found in some of his cases the pressure of the apparatus against a prominent part of the limb to cause inflammation and ulceration. This accident he has prevented, or remedied where it has occurred, by interposing between the splint and the part pressed upon, an air cushion.—*Lancet*, June, 2, 1838.

48. *Luxation of the Thigh of seven and a half months' standing. Fracture of the Femur during efforts of Reduction. Remarks by M. MALGAIGNE.*—A young man of 17 entered the service of M. Velpeau, at La Charité, in December, 1837, with a luxation upwards and backwards of the thigh of seven and a half months' standing. From a minute examination of his history and symptoms M. Malgaigne judged that the luxation had been primitively incomplete and directly backwards. At the period of examination the dislocation was complete, though the head of the femur was still very distant from the iliac fossa and the ischiatic notch, being at furthest but half an inch from its cavity. M. Malgaigne thinking it still curable, undertook, at the request of M. Velpeau, its reduction. On the

20th of January, he commenced his operations by suspending a weight of twenty-four pounds to the limb above the malleoli which was gradually increased up to the 28th, the day of operation. At this date, after extension had been kept up for some time, it was suddenly stopped and rotation of the knee carefully resorted to, during which a sudden crack was heard and a fracture of the lower part of the femur found to have been produced. On the 2d of February the following expose of the motives which had induced him to undertake the reduction of so old a luxation was made by M. Malgaigne, which, as containing views at least worthy of consideration, we have translated for the benefit of our readers.

"All surgeons agree in regarding as incurable, luxations which have existed for a certain time, which time is very limited for those of the femur. Of the three celebrated writers who have latterly treated of injuries of the bones, Boyer, Monteggia, and Sir A. Cooper, the first without expressing himself in an absolute manner states it to be very rare for a luxation, even of an orbicular articulation, to be susceptible of reduction at the *end of one month*; the second says *one month and a half*; and Sir A. Cooper, more bold than the others, fixes eight weeks as the period beyond which it is imprudent to attempt the reduction in dislocations of the femur, except in subjects who are not very muscular or those advanced in life.

"These certainly are great authorities; but if, nevertheless, we look into the matter and examine the reasons for these assertions we will be astonished at the looseness and inconsistency of their answers. Boyer thinks that the adhesions contracted by the bone are such that if the parts to which it is thus fixed are moveable, we draw them with it; and in the opposite case that we tear the skin and sometimes even the muscles sooner than obtain the least change of position in the bone.

"Monteggia alleges as objections to trials at reduction, the permanent shortening of the muscles which have adapted themselves to the new position of the bone, and have contracted adhesions which increase daily in force; the contracting or even the obliteration of the opening in the capsule, and lastly, though after a long period, the filling up of the cavity itself. Sir A. Cooper admits also three sorts of difficulties; 1st. The adhesions are such that even after removal of the muscles by dissection the bone cannot be returned to its natural cavity. 2dly. Sometimes the cavity is so filled up with plastic or even bony matter that it can no longer retain the head of the bone. 3dly. The luxated bone may form for itself a new articulating cavity from whence it cannot be removed without fracture. He further signalizes as dangers accompanying attempts made to reduce old luxations, the contusion of the skin, the tearing of muscles, the dragging of the nerves giving rise to paralysis, and finally, even declares that the member then reduced is not more useful than it would have been had it been suffered to remain in its abnormal position. But after this sad picture, how is it, let me ask, that Sir A. Cooper encourages attempts at reduction for luxation of the humerus after three months, while at the same time he forbids our attempting that of the femur after eight weeks? Is it that the adhesions are formed less slowly in the shoulder than in the hip? On the contrary we know that the work of nature, particularly for the bony system, is more rapid in the upper than in the lower part of the body. Is it that the cotyloid cavity is more readily filled with plastic or bony matter? Its depth gives it in this respect an incontestable advantage over the glenoid cavity. Like objections may be brought to the theories of Boyer and Monteggia, who also regard luxations of the shoulder as reducible after a longer period than those of the femur.

"But putting aside reasoning, facts may be brought forward to contradict these bold assertions. I will not here bring forward the reduction made by Guyenot at the end of two years. His observation contained in the *Memoires de l'Academie de Chirurgie* being so strangely written as to make it impossible to affirm whether reduction was accomplished or even whether a luxation really existed. A luxation reduced after two years is also reported by Pfaff; but the short analysis given of it by Richter does not permit us to attach great importance to it. A. Cooper has given a history, derived from Mr. Fornish, of a sailor who having

fallen at sea had reduced by this fall a luxation of five years standing. Far from serving as proofs, these histories have all need of being themselves proved. But examples exist of luxations of the femur which have been replaced after three months, and we know of authentic cases of luxations of the humerus reduced after five months, seven months, and even one year. The obstacles to the reduction of ancient luxations being the same for all these articulations, we have then a right to conclude that after the lapse of one year, at least, the reduction is possible for all. Such, in effect, is the doctrine I teach; but, at the same time, I make some exceptions to it. Sir A. Cooper makes an exception to his doctrine for emaciated persons and those of lax fibre; but after five or six months the member affected with an unreduced luxation is always atrophied in a greater or less degree as was the case in our patient, and as I have already stated it is not in these cases the muscles, but the adhesions which form the principal obstacle to reduction. It is upon the less rapid formation of these adhesions that Sir A. Cooper has likewise excepted from his law persons advanced in life. I confess, on the contrary, that an age a little advanced, particularly if at the same time nutrition was not active, would lead me to fear a fracture of the bone. I do not stop then on account of the youth, nor on account of the muscular vigour of patients. The two obstacles, which for different reasons appear to me to merit most our attention, are: where the luxation has given rise to violent inflammation in the surrounding parts; if this inflammation has moderated afterwards, it is still necessary to be cautious in trials at reduction, for fear of reproducing it. If it has determined suppuration, the ravages are too great and the bands of inodular tissue too powerful to allow of hope for a favourable result, and I abstain from all attempts. I believe too that we should refrain from attempting reduction in a lymphatic subject or where the luxation has kept up a permanent engorgement however slight. But above all I make a vast difference between luxations accompanied with partial rupture of the capsular ligament and such as have it completely divided. I have proclaimed elsewhere and annually demonstrate in my lectures, that primitive luxations of the femur are generally incomplete, a condition of great importance for the reduction when they are recent and still more so when they are of long standing. At the hip, the incomplete luxation is essentially accompanied with an incomplete rent in the capsule and it is the portion remaining uninjured which retains the head of the femur upon the cotyloidien border. Complete primitive luxations, of which I have found some examples with undeniable proof by autopsy, produce almost always complete and entire separation of the capsule. See now what must follow this state of things. In incomplete luxations if the patient retains his limb motionless, the head of the bone will remain on the edge of its cavity; or if he makes use of his limb he will place it a greater or less distance from it, and there will occur what existed in our patient, a true consecutive luxation, not by muscular action, but by the weight of the body, a cause absolutely necessary, and which I have been the first to make known, of consecutive luxations. But in this last case even the portion of the capsule remaining untouched stretches itself little by little and is not destroyed; the membrane lining it will continue to secrete synovia in the whole extent passed over by the head of the bone; from the new situation which it occupies to its old cavity there will be a free passage constantly lubricated by synovia, and only a little strictured, when the head of the bone is distant, by the surrounding tissues and by bands of new formation around the neck. Look on the contrary at the case of a complete primitive luxation with entire separation of the capsule, the luxated bone becomes surrounded first with effused blood which afterwards gives place to coagulable lymph; adhesions, at first cellular, and ultimately fibrous, will on all sides envelope the head and neck of the bone and separate it completely from its natural cavity. In the first case we have a free and moistened passage from the head of the bone to its cavity; in the second, a complete and solid partition between the two. You will now foresee what different obstacles are presented to reduction in these different states. For my part I would hesitate to attempt the reduction of a luxation of the femur primitively complete at the end of two months, while I have

without hesitation undertaken to reduce a complete consecutive luxation of seven months and a half. I dwell much upon this distinction, for it determines the prognosis and rational practice not only in luxations of the femur but in almost all others. When M. Sédillot reduced a luxated humerus of more than a year's standing, he had to treat a sub-acromial luxation with incomplete rupture of the capsule: when afterwards he attempted at the clinic of M. Lisfranc, to reduce a luxation of the humerus much less ancient, he failed, and I had predicted that he would fail, the luxation being sub-scapular and the capsule being consequently completely ruptured.

"Matters being thus, and the conditions of *reducibility* established, there still remains a difficulty to resolve. Why in the trials made up to this time in cases of old luxations have so few been reduced, and why when these trials have been successful have the accidents signalized by Sir A. Cooper been met with? I answer that in attempting luxations indiscriminately we must meet with some at least which are really irreducible and for all the others the want of success and the accidents are essentially the consequence of the methods adopted. In all the history of our art you will not find a single surgeon vary his mode of procedure for recent or ancient luxations. Good or bad, the same method is applied to all; and, nevertheless, the most enlightened surgeons acknowledge that in recent cases the obstacle to reduction arises from muscular resistance, while in old cases it is from adhesions. Now, in order to elongate the muscles, the secret consists in pulling parallel to their axis without interfering with a more or less favourable position for the member. In order to break up adhesions when they are firm, on the contrary, to pull above parallel to their axis is a bad method as by it we scarce do more than extend them and cannot break them up by a force much above that which the muscles would support. Take for example the natural ligaments, in drawing them parallel to their axis you will finally stretch them but you cannot rupture them except by tearing off the member itself. How then is it, it may be asked, that they are ruptured so easily in luxations? It is because they are not attacked but in a partial manner; stretched on one side only, stretched in a curvilinear direction by the head of the bone, and finally because the luxated bone acts upon them as a lever of the first kind. Applying these observations to artificial ligaments which it is necessary to break up in order to disengage luxated bones, I have established a general method which consists in making use of the displaced bone as of a lever of the first kind, acting in an analogous manner to the movements impressed upon it when the luxation was produced. Chance has sometimes led surgeons to employ this method; it is thus that for scapulo-humeral luxations the methods with the heel, the ladder and the ambe of Hippocrates, make the humerus act as a lever of the first kind. For recent luxations these certainly are not the best methods, but for old luxations I know of nothing superior or even equal to the ambe of Hippocrates. I comprehend how, with their tractions more or less parallel, surgeons may have succeeded in breaking up adhesions, yet feeble, such as they are for example after eight or ten weeks; it is too at this period that they generally cease to be successful; but when the adhesions are stronger they have almost uniformly failed. I have tried comparatively the efficacy of the two methods in two cases of old luxation of the elbow backwards, the one being of seventy days' standing, the other of three months and twenty-one days. The first occurred in a woman 22 years of age, treated by MM. Lisfranc, Marjolin, and myself; after extension with the aid of pulleys kept up in the direction of the axis of the limb the fore arm was flexed by main force and in pulling upon it in this position the reduction was effected. The other existed in a boy aged 11, reduced by M. Lisfranc and myself at La Pitié; extension in the direction of the axis of the limb and afterwards upon the fore arm flexed was altogether useless. I then pointed out a mode of procedure which assimilates to the general method, that is to say, that M. Lisfranc, seizing with one hand the upper part of the arm and the wrist with the other and placing the knee upon the olecranon, caused the ulna to act as a lever of the first kind, and in a few seconds broke up all the bands and replaced the bone; success as much more difficult to obtain as there had been a fracture cured with deformity of the portion of the humerus in contact with the radius, which hindered this last bone from

being as perfectly reduced as the ulna. M. Roux has stated at the academy of sciences that the reduction of as old luxations of the elbow was not very rare; for my part I do not know of other examples. I have the history of a man aged about 30, who entered the Hôtel Dieu, in 1836, for a luxation of the same kind of three months and nineteen days' standing, in whom a fracture of the olecranon occurred during efforts made by M. Roux to reduce it by the ordinary method." *Gazette des Hôpitaux*, Février 15, 1838. G. W. N.

49. *Laceration of the Perineum in Women.* By Prof. DIEFFENBACH.—Laceration of the perineum, commonly the effect of difficult or ill-managed labour, does not generally fall under the notice of the surgeon, unless the injury be extensive, and the inconvenience produced by it great. When the laceration is small, nature is, in most cases, able to effect a cure; and even where the whole length of the perineum has been torn through, the orifice of the rectum usually remains intact. I have already, in another work, communicated the result of my experience in the treatment of extensive lacerations of the perineum; the following observations are, therefore, to be considered merely as a supplement to the information then conveyed to the profession. The most recent cases of laceration of the perineum, which have fallen under my notice, are the following:—

Case 1.—The perineum of a young woman, 26 years of age, pregnant for the first time, and in whom the genital organs were remarkably small, was lacerated to the extent of an inch. I saw the patient six hours after the occurrence of the accident, and having removed the coagulated blood and lymph by which the edges of the wound were covered, I brought the latter together by three sutures. The parts were frequently bathed with warm water, and then some lint, moistened with the lead lotion, applied. On the third day I removed the two common sutures, and on the fourth, the twisted one. The union was perfect. The continued use of the Goulard's lotion removed, in a few days, some inflammatory tumefaction of the labia.

Case 2.—Laceration of the perineum, to the extent of an inch and a half, occurred in a female, 30 years of age, while giving birth to her third child. I saw the patient ten hours after delivery; the wound was clean, and its lips filled with firm coagula. I applied four sutures; two common, two twisted. The dressings were the same as those employed in the preceding case. On the third day the edges of the wound appeared united, as far as the commissure. I now removed the anterior suture and allowed the rest to remain until the fifth day. Up to the eighth day the knees were bound together with a handkerchief. The union now appeared to be solid, and the conformation of the external genital organs was not, in the slightest degree, modified.

Case 3.—A young woman, 22 years of age, fell from a height of a few feet, and struck the perineum against the edge of a stool. On examination, the genital organs were found considerably swollen, the vagina full of coagulated blood, and the left side of the perineum lacerated to the extent of half an inch. Two twisted sutures were immediately applied, and the antiphlogistic method of treatment had recourse to. The inflammation was thus quickly subdued, and the sutures removed on the fourth and fifth days: the cure was complete. An œdematous tumefaction of the surrounding parts, which persisted for several weeks, was removed by the use of Goulard's lotion.

Case 4.—A young married woman, 24 years of age, fell upon a porcelain chamber utensil, which broke into several fragments and wounded the perineum in various directions. Both labia were divided in different places, and one wound extended backwards for about the length of an inch, through the middle of the perineum. There were also several deep, long wounds in the parietes of the vagina, from which I extracted some fragments of porcelain. The patient had lost a considerable quantity of blood, and lay in a state of complete syncope. After having cleaned the wound and the vagina with injections of cold water, I applied a number of sutures at the different points which seemed to require them. The parts were covered with lint moistened in a cold lotion; leeches were applied to the inflamed organs, and a strict regimen enjoined. The whole

of the wounds were quickly united, with the exception of one small one, which suppurated, but finally healed in a few weeks. The patient, since then, has given birth to several children, and the cicatrices have remained perfect, not one having given way during labour.

Case 5.—A female, 30 years of age, suffered under incipient prolapsus of the uterus. The genital organs were remarkably relaxed and large, but the perineum, on the contrary, very small. It was, however, impossible to determine whether the enlargement of the entrance of the vagina and the narrowness of the perineum were the consequences of a trifling laceration, or of simple dilatation. I immediately determined on having recourse to Fricke's operation, and after having divided, with the scissors, the posterior angle of the fourchette, I applied eight sutures, partly twisted, partly common. In addition to these, I placed a couple of fine ligatures inside the vagina, through the edges of the mucous membrane. The operation was attended with complete success. After removing the sutures the breadth of the perineum was found to be considerably increased, and the orifice of the vagina contracted within reasonable bounds.

Case 6.—Laceration of the perineum, of a portion of the vagina, and several inches of the rectum, occurred in the person of a female 26 years of age, during her first labour. Six or eight hours after the accident, I was called in, and commenced by closing the wound in the wall of the vagina with five or six sutures. I then treated the rectum in the same manner, and finally closed the lacerated wound of the perineum, partly with common, partly with twisted sutures. The parts were constantly cleaned with lotions and baths, but the obesity of the patient prevented the local treatment from being followed up in as efficacious a manner as was desirable. When the sutures came away the greater part of the perineal wound was found to be ununited, but a portion, near the anus, had healed. In this case the application of the suture was only partially followed by success; the patient, however, was able to retain both fluid stools and flatus.

Case 7.—The next case was a still more difficult one, although the result was more fortunate. It occurred in the person of a woman 40 years of age; during a difficult labour, the perineum, half the vagina, and an inch and a half of the rectum were lacerated. I visited the patient on the following day, and immediately judged that the case would be one of extreme difficulty, for I had seldom seen a more corpulent woman. The abdomen hung down over the middle of the thighs, and the labia were of enormous dimensions. Having placed the patient in a convenient posture and removed the coagula of blood, &c., I first brought together the edges of the wound in the rectum with four points of suture, and then applied a strong suture to the lacerated portion of the vagina, bringing the extremities out through the vulva; complete coaptation of the wound in the vaginal parietes was obtained by four other sutures of lesser dimensions; finally, the wound in the perineum was united by two common sutures, and two twisted ones. The tumefaction of the parts prevented me from making any examination on the following day, and we were compelled to confine ourselves to the simple use of warm fomentations and injections. Several of the sutures which had been placed on the perineum and vagina had begun to cut through the tissues on the third and fourth days, and were all removed on the sixth day. The anterior part of the perineum, as well as the lower portion of the vaginal wound, were now found to be ununited, and the latter communicated through a small opening with the rectum. The parts were frequently washed with a strong decoction of chamomile flowers, and the process of granulation thus encouraged. After the lapse of a few weeks, the opening between the vagina and rectum was closed, and the whole of the lacerated parts in the perineum were united, with the exception of a small slit at the anterior part.

Case 8.—In the following case, several obstacles impeded the operation and diminished the chances of cure: A woman of nervous temperament and feeble constitution, twelve years anteriorly, while giving birth to her first child, met with a very severe accident, a considerable portion of the vagina, the whole of the perineum, and two inches of the rectum, having been torn through. On examining the unfortunate woman, I found the genital organs and the rectum united by a large open slit, and it was scarcely possible to determine at what

point the perineum had formerly existed. I operated, in this case, in the manner which I commonly adopt under similar circumstances. I freed the rectum a little laterally, in order to conserve its proper diameter, then refreshed all the edges of the injured parts, and united the rectum with five, the vagina with six, and the perineum with four sutures. The parts now presented a pretty natural appearance, and as no tension existed, I did not think it necessary to have recourse to the lateral incisions. Inflammation set in moderately. Goulard's lotion was applied to the parts, which were frequently examined. The sutures appeared firm on the third and fourth day; they were, however, removed, with the greatest caution, on the following day, and the union appeared perfect. After the lapse of a few days, during the first evacuation from the bowels, a communication between the rectum and vagina was discovered. For several months, the edges were touched with caustics, but without any great benefit; the patient was unwilling to submit to any further operation.

Case 9.—A healthy woman, 36 years of age, had the misfortune to listen to the instances of a young man, by whom she became pregnant. She was herself small in person; the pelvis and genital organs were also small, while the child was remarkably large. During delivery, the perineum and genital organs were injured to a very remarkable extent. I was called to see the woman on the following morning, and found her bathed in blood. The vagina and rectum formed one large cavity, the edges of which were ragged. A large flap, three and a half inches long, and two broad, hung down from the external genital organs, and on examination was found to belong to the vagina, to which it was only connected by a band of tissue not broader than an inch. After consultation with the physician in attendance, it was determined that some effort to relieve the unfortunate woman should be made, although the case appeared to be a very hopeless one. I commenced by bringing together the sides of the lacerated rectum, and for this six sutures were necessary; the wounds of the vagina required no less than ten sutures, and for the perineum five were employed. It is unnecessary to mention that one end of each ligature was cut off close to the knot. Although I did not expect to obtain anything like a complete cure in this case, yet I hoped, at least, to render the woman's life less uncomfortable. The treatment was moderately antiphlogistic; the wounded parts were frequently washed with warm Goulard's lotion, and, contrary to our expectations, the injured parts healed so completely by the first intention, that, after the removal of the numerous sutures, nothing could be observed but a fine cicatrix. A small communication between the rectum and vagina, healed after a lapse of eight days, on touching the edges with caustic. Several physicians have examined this case since the cure, for the obtaining which I am much indebted to the assiduity and talent of my assistant, Dr. Hildebrandt.

"I have described the above cases as briefly as possible, omitting every circumstance which was not strictly essential. It should, however, be mentioned that I took care to produce constipation for the first six, eight, or ten days, by small doses of opium. Whenever the desire to go to stool became excessive, a large tube, open at one end, was passed into the rectum, and a quantity of warm water thrown up, by which the scybala were softened. The catheter was also introduced several times within the twenty-four hours."—*Lancet*, from *Berlin Med. Zeit.*, December 27, 1837.

50. *Opiate Lotions in Phlebitis.*—M. PASQUIER, Chief Surgeon of the "*Invalids*," has employed with advantage, opiate lotions in five cases of inflammation of the internal saphena vein, arising from varicose and atonic ulcers in the course of this vessel, and occurring in debilitated old men. The saphena in all these cases was highly inflamed in its whole course. After general bleeding and repeated applications of leeches, rendered necessary by the violence of the inflammation, M. P. had recourse to opiate lotions, made by dissolving one drachm of gummy extract of opium in two pints of a strong decoction of marsh mallows and poppy heads. Long compresses well dipt in this liquid, and laid on the limb over the inflamed vein, and the whole covered with gummed cloth.

Every half or three-quarters of an hour, this cloth was carefully raised, and the compresses wet again.—*Bulletin Gen. de Thérapeutique*, June, 1838.

51. *Aneurism of the arteria innominata and origin of the right Subclavian artery—ligature of common Carotid and Subclavian arteries.*—In our No. for February, 1837, p. 522, we gave the details of a case of aneurism of the arteria innominata and origin of the right subclavian, in which a ligature had been placed on the right common carotid artery by S. W. FEARN, Esq.

Two years after this operation the patient came again under the care of Mr. Fearn. It appears that since the operation she has suffered repeated attacks of bronchitic inflammation, which appears to have been induced partly by the pressure of some remaining tumour, and partly by repeated exposures to cold and the irregular life she has led. The following was the condition of the patient when she came the second time under Mr. Fearn's charge.

"She has a somewhat troublesome wheezy cough, which teazes her most in the day-time. She can sleep with her head low, most of the night, with coughing. Her breathing becomes short and her cough is increased, if she walks fast or exerts herself violently in any way. Her pulse yesterday was 110; to-day she is a little more feverish from her cold, and her pulse is 120. It preserves the same indistinctness in the arteries of the right arm, as when she was last under my care. In the left arm the pulsations are of ordinary strength. When she is quiescent there is no appearance of tumour in the site of the former swelling, but by pressing the fingers forcibly behind the sternum or the sternal end of the clavicle, a pulsation is felt, and on applying the stethoscope in this situation a double sound, as of the heart, is heard, and if she is directed to hold her breath, a *bruit de soufflet* is also slightly audible. When the instrument is applied over the subclavian artery in the supra-clavicular space, the *bruit* is found to be loud and distinct, and as far as can be made out, appears to arise from an obstruction to the flow of blood where the artery arrives at the inner edge of the scalenus. The *bruit* is likewise audible, though it is much less loud and distinct, beneath the clavicle. We were not able to *feel* any pulsation in the artery, as it passes over the first rib, but by pressure upon it in that situation, the pulse at the wrist was stopped, showing that the pulsation in the radial artery does not depend upon mere collateral circulation, but that the chief source of supply is through the subclavian. During the efforts of coughing there is a considerable, undefined, bulging swell, which forces forwards the lower attachments of the sterno-cleido-mastoideus. It appears, however, that this is not any arterial tumour but the apex of the lung. She is ordered to abstain from meat, and to take an antimonial mixture every four hours.

"29. Her pulse has come down to 100; she experiences but slight distress in her breathing, though her cough is still troublesome.

"Aug. 2. I have this day performed the operation of placing a ligature on the subclavian artery, as it passes over the first rib. I should probably have hesitated in adopting this step, though I had a very strong feeling with regard to it myself, had I not been sanctioned in it by others whose opinion I consider entitled to every consideration. I have the high authority of Mr. Wardrop, in his work on aneurism, and I have his more direct sanction expressed by letter, in reply to a statement with which, at his request, I furnished him; besides which, Mr. Jordan and other surgeons in Manchester, and some of my most esteemed medical friends in Derby, have encouraged me in the hope that this last proceeding may prove final and successful. The operation was performed at one o'clock, in the presence of a number of medical practitioners, and its steps were pretty much as follows:—I made an incision about three inches in length, immediately above, and in a line with the clavicle, extending from the anterior margin of the trapezius to the posterior border of the sterno-cleido-mastoideus muscle; having frequently divided the integument, platysma, myoides, and superficial fascia, I proceeded to separate the fatty substance filling up the supra-clavicular space, with the forceps and a blunt director. The outer edge of the scalenus was pretty easily reached, and after separating still further the

surrounding cellular attachments of the vessel, I was enabled to pass a ligature around it. The artery was very satisfactorily insulated, and the patient lost scarcely an ounce of blood during the operation, which lasted exactly fifteen minutes. One suture was employed, and a few strips of adhesive plaster and a wet pad having been placed over the wound, she was put to bed. The pulse in the left arm, immediately after the operation, was 100; there was not the slightest perceptible pulsation in the right arm. She complains of pain in the right axilla and wrist.

"At midnight there was no increase in the frequency of the pulse; she has slept about three-quarters of an hour. Ordered to take a purging draught, and small doses of nitre and tartar emetic every four hours.

"3. Has slept at intervals during the night; is free from pain, and thinks herself altogether better than before the operation. There is no heat about the wound; pulse 100. The right arm has maintained its natural heat. Bowels open four times. To be kept very quiet, and to have nothing but a little gruel or tea.

"*Evening.* Still going on very favourably. Bowels open several times. *Bruit* gone.

"4. Slept from ten last night till four this morning, since which time her cough has been troublesome, and she is now rather feverish; pulse 104; bowels not moved since last night. To take a purging draught directly, and afterwards an antimonial mixture in repeated doses; to sip a little simple oxymel with laudanum, when the cough teazes.

"*Night.* The draught has acted twice; cough better; progressing favourably.

"5. Has passed an excellent night; makes no complaint; pulse 95; bowels open. To continue.

"*Night.* Dressed the wound, which has united very nicely by the first intention. I made a careful examination with the stethoscope both above and below the clavicle, but there is no *bruit* or arterial sound of any kind, and there is no perceptible pulsation even behind the lower attachments of the mastoid muscle. —Contin. mixture; a purgative draught if necessary.

"6. Complains of uneasiness in the arm; in other respects the same as yesterday; pulse 94.

"12. The patient has continued steadily to improve since the last report. She has not taken any medicine for four or five days, with the exception of an occasional purging dose. She says she does not now experience any difficulty in her breathing, that she coughs a time or two in the course of the day, but that in the night she is entirely free from it; indeed there seems to be nothing at all amiss with her. The pulse in the left arm is of the natural strength, and beats 70 in the minute. In the right radial artery *I think* I can perceive the slightest return of pulsation: it is, however, doubtful. She has no pain or uneasiness in the limb, and in fact I may say she is entirely free from complaint of any kind. The lungs are throughout permeable, and the respiration is free from abnormal sound. The same may be said of the circulation. There is no *bruit* either above the collar-bone, or elsewhere, and the sounds of the heart are natural."

The ligature came way on the 15th day after the operation, and in a few days more the wound healed.

At the date of the last report, upwards of five weeks after the operation, it is stated that the patient has now "lost the sensation of a *something sticking in her throat*, which formerly teased her so much, and which she referred to about the situation of the bifurcation of the windpipe, and though she coughs occasionally, she can walk almost any distance without producing the slightest difficulty in her breathing. Her pulse keeps at about 70; her appetite is good; she sleeps well at night; and indeed she makes no complaint of any kind."

"I need not say," observes Mr. F., "that the result thus obtained, is highly gratifying to me, and I doubt not it will be looked upon with interest by the profession at large, the more especially as it is the first instance in which the *double* operation has been performed for the cure of an aneurism of the innominate; and it appears to me that were proof wanted, this case is decisive of the

question whether disease so situated is to be considered beyond the reach of surgical art. I make this observation because I am aware that there are some surgeons of the most deserved reputation and eminence, who are still, as I think, prejudiced against the distal operation for the cure of aneurism; and though it may be very true that ligature of an artery on the proximal side of the disease is the preferable proceeding, when the case clearly admits of it, it seems equally true that it is the duty of the surgeon, in cases similar to the one under consideration, to urge the adoption of the only means left to save the life of the sufferer. I cannot, therefore, agree with Mr. Liston in the observations he makes on this subject in his excellent work on Surgery, where he says that though a surgeon might be justified, at the solicitation of his patient, in performing the distal operation, he would by no means recommend him to *advise* it.

"As far as our experience at present goes, it is clearly advisable in a *fair* case of aneurism of the innominata, where the disease is not too far advanced, and where it is uncomplicated with other disease, in the first instance to place a ligature on either the carotid or subclavian vessel as may seem best, and, supposing the cure be not accomplished, to tie the remaining artery, as in my case.

"In the case of Scattergood, I entertain but little doubt that a permanent cure would have been effected by the first operation, had she not exposed herself to every sort of excitement likely to prevent such a result; as it was there can be no question her life was saved by it, and I should therefore not hesitate, were a similar case to come under my care, to adopt the course I have pursued in this instance."—*Lancet*, 25th Aug. and 22d Sept. 1838.

OPHTHALMOLOGY.

52. *Amaurosis from tumour in cerebellum pressing on corpora quadrigemina.*—Dr. G. KERRISON has recorded, in the *London Medical Gazette*, for Sept. last, an interesting example of this. A man *ætat.* 66, of temperate habits, had for three years been gradually losing his sight, and for two months had suffered from pain in occipital region. When seen by Dr. Kerrison, April 23, he had complete amaurosis, with dilated and insensible pupil on the right side, and very indistinct vision (almost amounting to amaurosis) in the left eye. There was much dullness, and at the same time anxiety, in his countenance; his mind was much confused; his answers sometimes rambling; and his utterance slow and heavy. His hearing and all his other senses were perfect. Under an antiphlogistic treatment with counter-irritation to the back of the neck, his general health improved; but on the 8th May he had a fit, and a second one on the 3d of June; on the 18th June he became comatose, and died the afternoon of that day.

On examination, behind the third ventricle, and pressing on the corpora quadrigemina, and also partially on the cerebellum, there was a tumour the size of a walnut, of a cartilaginous nature, but which in some parts was soft and easily broken up. It was partly surrounded by a softish substance, having some points of bloody infiltration. This extended for some distance into the left hemisphere, on which side there was also about 3iss of an amber-coloured gelatinous effusion lying over the choroid plexus, and in the posterior corner of the lateral ventricle.

53. *Operation performed in Persia for the removal of opacity of the cornea.*—S. M. GRIFFITHS, Esq. states that in Tehran, Persia, an operation is practised for the cure of opacity of the cornea, which is said to be frequently successful in improving the transparency of the cornea, if not always capable of restoring perfect vision. The object of this operation seems to be, to completely cut off the vascular communication, by excision of a circular portion of the conjunctiva at a small distance from the margin of the cornea, which is accomplished by fixing eight small hooks into the conjunctiva, about a line from the union of the cornea with the sclerotica, quite round the cornea; the operator then raises that part of the conjunctiva by pulling these hooks towards him, and with a pair of

scissors he cuts off the portion thus raised, and completely insulates the conjunctiva covering the cornea, the consequence of which is the gradual absorption of the opacity of the part affected, and the cornea recovers its transparency. The after-treatment is very simple, consisting merely in the introduction of a small quantity of antimony between the lids; in fact the result of the operation is confidently expected to be successful without any other application.—*Transactions of the Med. and Phys. Soc. of Calcutta*, vol. viii. Pt. 1.

MIDWIFERY.

54. *Expulsion of a Fœtus after the interment of the Mother.*—A case of this is recorded by Messrs. DUNN and SAVILLE, in the *Edinburgh Medical and Surgical Journal*, for October last. A woman aged 39, died in labour, 18th July, after suffering severe and ineffectual pains for 48 hours. She was buried the next day, but in consequence of reports that she was not properly treated, the body was disinterred three weeks and four days afterwards. The attending physician stated that the os uteri was during labour so rigid and studded with tubercles, that he never could introduce, more than one finger into the cervix. The patient suffered from repeated uterine hemorrhages for some time previous to enduring labour.

On examination a child of near eight months growth was found lying on the mother's thighs, the head downwards, and one foot and the funis still connected with the vagina. Two large ulcers were observed in the neck of the uterus, and in the back of the vagina, the neck was perfectly relaxed, the placenta still attached to the fundus uteri, but the uterus loose and not contracted on it—indeed presenting a cavity nearly large enough for the fœtus, which had been expelled. The nurse was positive of the fœtus having been in the uterus seven hours after death.

It may be asked how is it that a child which was expelled after the death of the mother could not be removed during her life. Mr. Dunn thinks that this was owing to the resistance of the os uteri and cervix being overcome, 1st, by the relaxation occasioned by the act of dissolution, and 2dly, by the collapse of the cauliflower excrescences, which seem to have been rigid and swollen during life, but were totally gone on the necroscopic inspection; and *secondly*, by the distension of the parietes of the abdomen from the gas evolved during decomposition, the os and cervix reacting upon the most yielding parts, which were now the os and cervix uteri, and thus, by their common elasticity, expelling the child. The collapsed and flaccid state of the uterus, the very relaxed cervix and mouth, the distended abdomen, all concur in supporting this view.

Dr. MAIZNER, in a dissertation published at Berlin in 1835, has collected forty-three cases in which the fœtus has been expelled from the womb after the death of the mother; in one only had the woman been interred.

55. *Extra-Uterine foetation—Gastrotomy—Cure.*—On the 15th of September, 1837, Dr. Swanck, of Hamburgh, was called on to attend a female, who had experienced labour pains for the last three days; on examination he discovered an extra-uterine pregnancy. Gastrotomy was performed on the following day; an incision, five inches in length, was made along the linea alba, and the chorion exposed, which presented a tendinous appearance; the membranes were now divided, and the fœtus brought into view, but the incision was found to be too small to admit of its extraction; the opening of the abdominal parietes was, therefore, enlarged by half an inch, when the fœtus was removed without difficulty; in a few moments more the placenta presented between the edges of the wound, and was also extracted. The wound was united by five sutures, and after a lapse of three weeks the woman was perfectly well. The child also survived, and at the time of the publication of this case was a strong healthy boy.—*Lancet*, September, 1838, from *Caspar's Woch. and Archives de Méd.*, June, 1838.

56. *Resuscitation of Still-born Children.*—The following remarks on this subject, by J. Toogood, Esq., published in a recent No. of the *Lancet*, (Aug. 25,) though not possessing much novelty, we have thought worth transferring to our pages, inasmuch as they tend to encourage practitioners to continue their efforts for the resuscitation of asphyxiated infants, by showing that success may be often obtained under very discouraging circumstances.

“Cases of apparently still-born infants are very common. The attempts to restore life are frequently ill-directed, and not calculated to promote the object. It will be found that a very large proportion of children, apparently dead born, may be resuscitated, if proper means be resorted to and persevered in for a sufficient length of time; but the modes generally employed to restore life, such as immersing the infant in warm water, friction, and pouring stimulants down the throat, are not at all calculated to produce the effect intended, and if these means do not succeed after a short trial, all further attempts are generally abandoned. The plan I always adopt, which has never failed where the child was living during birth, is very simple, and only requires perseverance. The following cases, under circumstances by no means favourable, which have been selected from a great many more, will prove the success of the practice recommended.

“Grace White, a very weakly woman, far advanced in consumption, was seized, in the morning, with uterine hæmorrhage, which continued slightly till the evening, when I saw her, and, whilst standing by her bed-side, the flooding increased with such violence, that I thought it best to deliver her instantly; the child was still-born. As soon as I had removed it from the mother, and seen her safe from any immediate danger, I placed a napkin over the child’s mouth, and inflated its lungs from my mouth, pressing out the air from the chest afterwards, and thus imitating natural respiration. After having continued this process for thirty-five minutes, the child made a very slight attempt to breathe, and the face became slightly suffused; by persevering ten minutes longer, the free action of the lungs was established, and the child cried lustily.

“The next case was that of a poor woman, named Sarah Holmes, of the parish of Spaxton, who had been in labour a long time, with a presentation of the arm, and, as it was her first confinement, it became very difficult to turn the child, particularly as she was advanced in age, and the parts were very rigid. The child was still-born; but, by pursuing the same plan actively for three quarters of an hour, animation was perfectly restored.

“The next was a case of presentation of the funis, and as the labour was slow, the child was still-born, but recovered by the same means in half an hour.

“The last case with which I shall trouble you, was such as to discourage the attempt at resuscitation under any circumstances; it was a case of twins, and the second child presented with the head, before which a considerable portion of the funis had descended. The delivery was extremely slow, from the general weakness of the woman, who had been for a long time in a bad state of health, and the child was born, apparently, quite dead. As the mother’s situation was extremely critical, more than half an hour had elapsed before I could attend to the child, and, on inquiring, I found it had been wrapped in a cloth and placed on a chair in another room. I immediately made the attempt to restore it, and, by persevering steadily for twenty-five minutes, I had the satisfaction to see symptoms of returning life; and, in about fifteen minutes more, the child breathed freely.

“Every thing in this last case was unfavourable to the restoration of the child; the mother’s long-continued disease; the circumstance of her having two children, and more particularly the delay which took place before any attempt was made, during which time the child was exposed in a room without fire, in the winter, with a partial and very slight covering. I am warranted, by my own experience, in recommending the attempt to restore all still-born children who have been alive during the birth; and if the means of resuscitation, above mentioned, be actively employed, and steadily persevered in, I believe the majority of cases will be successful. In all cases the restoration of a child is a most

satisfactory circumstance, and, in some instances, of the greatest possible consequence. I have never found anything necessary but the regular inflation of the lungs, which I do with my own mouth in the way I have described, and have generally observed the first symptom of returning life to be a tremulous motion of the respiratory organs; the child next makes a feeble attempt to inspire, and the colour of the face changes. The inflation should then be made quicker, and as the attempts to breathe increase, sal volatile, or brandy, rubbed over the palm of the hand, and held over the mouth during the inflation of air, will materially assist the recovery, and has a better effect than pouring stimulants into the stomach. A few smart slaps on the gluteal muscles will now generally complete the recovery.

“It has always been my practice to expire as completely, and immediately to inhale as much air as possible, and this should be repeated frequently during the process of inflating the lungs.”

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

57. *The Blood is not always black in Asphyxia by Charcoal.*—The black colour of the blood is generally pointed out as one of the most constant characteristic phenomena of asphyxia from charcoal. It would appear, however, from the researches of M. OLIVIER, that instead of being black, the blood which flows from the vessels in cases of asphyxia produced by charcoal, is sometimes red. This physician, in making a judicial examination in 1837, of a number of bodies of individuals asphyxiated by charcoal, found, the blood red in five cases. What M. Olivier has seen in the dead body, M. MARVE has observed during life in several subjects incompletely asphyxiated by charcoal. In one case, the phenomena of asphyxia had existed several hours, and were so intense that there was imminent danger of death. In this state, a vein was opened in the arm, and the blood which flowed was manifestly red, and promptly coagulated. In a second subject, in the highest degree of asphyxia, the blood which was drawn from the arm was equally red. In a third case of asphyxia, of brief duration, the blood was red and promptly coagulated. Finally, in two others, where the asphyxia had reached its last stage, for one of the individuals died two hours after having been bled, the blood which flowed from the vein was red, and coagulated promptly.

These facts show that, in post-mortem examinations, a red colour of the blood should not be considered as demonstrating the impossibility of death having been occasioned by asphyxia from charcoal.—*Bulletin Gén. de Thérap.* August, 1838.

58. *Poisoning by Arsenious acid cured by Tritoxide of Iron.*—An example of this is recorded by JOHN MURRAY, M. D., in our esteemed cotemporary the *Quarterly Journal of the Calcutta Medical and Physical Society*, (Dec. 1837.) The subject of the case was an hospital apprentice, ætat. 22, who swallowed, with the intention of committing suicide, about fifteen grains of white arsenic, at nine A. M. of the 19th May, 1837. At ten o'clock, vomiting and purging came on. When seen by Dr. Murray at eleven o'clock, he was much depressed, pulse 100, weak. Three grains of tart. antim. were given, which caused free vomiting; he was bled 16 ounces; and repeated mucilaginous draughts given, until some of the tritoxide of iron was prepared.

One, P. M. Acute pain in epigastrium, extending over abdomen; efforts to vomit; tenesmus. Half an ounce of the tritoxide of iron was given every hour, with mucilaginous drinks. At four, P. M., twenty leeches were placed to epigastrium, which relieved the pain in the epigastrium. A dose of oil was given at seven, P. M., and the tritoxide continued at longer intervals. Eleven, P. M., one copious stool; pain in abdomen, acute on pressure; slight cramps in

the legs, pulse 48; skin cold. The tritoxide to be given every hour; epigastrium was blistered by nitrate of silver, and an enema administered.

20th. Has slept a little; had one dark brown stool, no vomiting; pain in abdomen relieved; thirsty; pulse 80; tongue furred; skin warm. *Ol. Ricin.* ℥j. Effervescing draught p. r. n. The three following days he had several black stools; he gradually improved, and on the 24th May he returned to his duty.

59. *On the Poisonous effects of Rue, and on its Influence on the Uterus.*—"It would seem that the various means deemed capable of inducing abortion are not equally made use of in all countries alike; each country appearing to follow some particular practice in preference to any other. In Paris the puncture of the membranes is generally resorted to; and it is truly disgraceful to think that not only many midwives, but even some medical men, lend themselves to this flagitious practice. I lately saw a melancholy case of a young woman, who died of *metro-peritonitis* in the Hôtel Dieu of Paris, from a deep penetrating wound of the uterus, induced by the use of a trocar for the purpose of bringing on miscarriage.

"In other parts of France the use of rue and of savine leaves, in various preparations, is chiefly trusted to as provocatives of abortion. At present we shall confine our remarks to the former of these two plants.

"There has been much difference of opinion as to the medicinal effects of rue; some alleging that it exerts a direct and immediate action on the uterine system, while others contend that, whenever it seems to do so, this action is only secondary to, and consequent upon, an irritation of the intestinal canal and a disturbance of the nervous system; and hence that its use much oftener fails in provoking miscarriage than succeeds.

"To determine the question, Dr. HÉLIE, the author of the present observations, reports several cases. One of these is as follows:

"A young female, having suffered a great deal in her first accouchement, was resolved to try some means to bring on abortion in her second pregnancy. She applied to Dr. Hélié for the purpose, being about four months advanced; but he very properly declined giving her any advice, but that of dissuading her from her intentions. She told him, however, that, if he would not prescribe for her, she would apply to some other person. A fortnight afterwards, she returned to him; and then she was no longer pregnant. She mentioned to him that, by the advice of a woman, she had taken three fresh roots of rue, cut them in pieces, and then boiled them in a pound and a half of water down to three small cupfuls, which she drank one evening on going to bed. Dreadful pain in the stomach came on, accompanied with vomitings, and with such universal oppression, that she thought she was dying.

"This state continued all the night, and next day the symptoms were much abated. But now she began to experience colicky pains, slight at first, but gradually increasing in severity, and returning at intervals. On the evening of the second day, they became much more violent, and were evidently the pains of labour: abortion came on soon afterwards—in forty-eight hours after taking the decoction of rue."

"Case 2.—A young woman, residing in a farm-house, was suddenly seized with most severe vomiting, violent twisting pains in the abdomen and limbs, restlessness, and tendency to delirium. She had all the appearance of being intoxicated.

"Dr. Hélié suspected that the illness was the effect of medicines, which had been taken with the view of provoking abortion: the patient seemed to be in the seventh month of pregnancy, although she positively denied it.

"He therefore contented himself by withdrawing certain drinks which she had been using, and by confining her to simple barley-water.

"The vomitings speedily ceased; but the abdominal pains continued to increase, and in the course of the following day, she was delivered of two infants.

"Alarming symptoms of poisoning came on afterwards; but these for-

fortunately subsided by degrees, and the girl ultimately regained her health. She afterwards admitted that she had made use of a strong decoction of rue leaves."

"Case 3.—A girl, in the fourth month of pregnancy, took for several days a strong dose of the fresh juice expressed from rue leaves. Vomiting, severe colic, great prostration, and tendency to syncope, somnolence, delirium and coldness of the whole surface came on. There was also, as in the preceding case, an inflammatory swelling of the tongue, accompanied with a profuse salivation. The expulsion of the fœtus did not happen till the sixth day after the swallowing of the poison. The acrid-narcotic effects did not cease altogether for another week.

"From the particulars of these cases, we may reasonably conclude that rue, in powerful doses, has decided narcotic irritant effects. Its action in diminishing the force and frequency of the heart's movements appears to be as marked as that of digitalis: in some cases, under its influence, the pulse has fallen to thirty beats in the minute.

"Its peculiar action on the tongue, inducing an active inflammation of this organ, deserves notice.

"Dr. Hélié is of opinion that it also has a direct and *elective* action on the uterus, and that therefore it may be regarded as a provocative of miscarriage, quite independently of its irritant and narcotic effects on other parts of the body.

"If such be the case, we may reasonably expect that the use of rue will be serviceable in many cases of amenorrhœa. The fresh plant is very much more powerful than the dried one: indeed we should never trust to any preparation of the latter. The expressed juice of the fresh leaves is the most active form in which it can be taken; and, after it, a decoction of the fresh plant."—*Med. Chirurg. Rev. from Annales d'Hygiène.*

MEDICAL STATISTICS.

60. *On the Relative Frequency of Pulmonary Consumption and Diseases of the Heart.* The *Journal of the Statistical Society of London*, for July last, contains a paper on this subject by Dr. John Clendinning which we conceive to be so interesting that we shall transfer the greater portion of it to our pages.

"The first topic that offers itself for observation," says Dr. C. "is the relative frequency of morbus cordis, or the disease of the heart as compared with phthisis, or pulmonary consumption, and other grave diseases of a character sufficiently defined for numerical comparison.

"The facts adduced in the following statement are drawn from the results of above 500 autopsies made within a limited period. Of these about half were cases included in the class *varia*, or diseases of various classes and kinds, exclusive of pulmonary consumption and disease of the heart. Of the remainder, between 70 and 80 above puberty were cases of consumption, of which two-thirds were males—and the rest were cases of disease of the heart, of which likewise two-thirds were adult males. The number, then, of cases in which the heart was more or less diseased, occurring in a total of 520 to 530 inspections, was 170 to 180, or about 33 per cent.; and if we deduct from the total number of autopsies the cases of persons under puberty, or 15 years of age, amongst whom but two or three cases of diseased heart were observed, we shall then have, as the ratio of disease of the heart to the whole number, about 35 per cent. Unquestionably such a ratio is enormous, exceeding by far the calculation of those most disposed to estimate highly the mortality attributable to the heart; yet I have myself but little doubt that, with some explanation, the following table, which contains the facts relating to phthisis and disease of the heart to which I refer, arranged according to age and sex, will be found less extravagant than it may, perhaps, at first appear:—

A Statement of the Number of Cases examined between the ages of 15 and 100, distinguishing the ratio which cases of Pulmonary Consumption (Phthisis) and Disease of the Heart (Morbus Cordis) bore to the whole number.

AGES.	MALES.						FEMALES.					
	Number of Cases.				Per-Centage Proportion of		Number of Cases.				Per-Centage Proportion of	
	Pulmonary Consumption.	Disease of the heart.	Other.	Total.	Pulmonary Consumption.	Disease of the Heart.	Pulmonary Consumption.	Disease of the heart.	Other.	Total.	Pulmonary Consumption.	Disease of the Heart.
15 to 20	11	5	8	24	21	21	20	33	24	15	15	15
20 " 50	19	24	24	67	28	28	31	47	17	17	17	17
50 " 70	17	34	33	84	20	40	30	55	16	29	16	29
70 " 100	3	1	15	31	10	49	24	59	5	23	5	23
Total.	50	76	80	206	24.2	36.9	97	49	105	174	15.5	24.1

"The principal explanatory remark I think it necessary to offer is this: my principal field of observation receives all poor applicants from a certain district, provided only their complaints are severe, making no distinction as to sex, age, or disease, except small-pox, nor between curable and incurable cases; and, in general, entertaining all the latter until the end of life, unless the sufferers voluntarily withdraw. The effect of this system of admission is that, compared with other asylums of sickness, the parochial infirmary, so governed, has, according to well-known laws of mortality, an annual loss of life much exceeding that of county infirmaries and city hospitals—a mortality, it is to be remembered, that is augmented very considerably by accessions of cases dismissed from other charities as incurable. For the effect of this comparatively indiscriminate admission and unlimited retention of patients, of course a large allowance must be made. What the exact amount of that allowance should be I am not prepared to say; but if it be assumed at the immense proportion of 50 per cent. of the fatal adult cases, which, I am quite sure, is much over the mark, we shall still have a ratio of heart disease for which perhaps few persons will be prepared.

"The extravagance of the ratio will probably appear still greater when we compare the amount of cases of phthisis with that of morbus cordis. Phthisis, or chronic pulmonary disease, is, and has long been held by pathologists and medical statistes, to be by far the more frequent of the fatal diseases of these and all other temperate climates. The accomplished Dr. Young, writing in 1816, attributed to phthisis, as Heberden, Woolcombe, Wells, &c. had previously done, full 26 per cent. of the whole mortality of England. He begins his remarkable work on consumptive diseases thus:—"Consumption is, in almost all civilized countries, the most extensively and inevitably fatal of diseases;" and elsewhere (page 41) he says, 'the frequency of consumption in Great Britain is usually such that it carries off about one-fourth of its inhabitants; at Paris the mortality of consumption has been estimated at one-fifth, and at Vienna it is said to be one-sixth, of the whole. But the mortalities at Paris and in the South of France, from consumption, have frequently amounted to one-fourth of the whole.' Seven years previously to the publication of Dr. Young's work, Dr. Woolcombe, of Plymouth, calculated that the annual mortality in England, from consumption alone, amounted at that time to 55,000 persons (Remarks, &c., page 73); and Sir James Clark's estimate is apparently higher than Dr. Young's, being, for the 181 years ending with 1891, as follows:—

For the Year 1700	{ The Deaths from Consumption were }	145
	{ to all the Deaths of the Year . }	
1700 to 1750	" "	214
1750 " 1801	" "	263

1801 " 1811	"	"	·288
1811 " 1821	"	"	·316

General average for the 121 Years . . . ·245 or 1 in 4

And he adds, 'It now appears (1835) to constitute one-third of the whole mortality.'

"The difference between my own conclusions and those of the distinguished authors just referred to—conclusions in which they are supported by the principal recent writers on the subject, as Benoiston de Chateauneuf, Lombard, &c.—will seem the more wide and irreconcilable, for this reason: Drs. Woolcombe and Young, as is well known, wrote at a time when the name of phthisis, or pulmonary consumption, was extended to other pulmonary affections besides that to which it has been limited by Sir J. Clark, Dr. Lombard, and others, who have written upon the subject, since the appearance of Laennec's great work; so that, if before 1819 tubercular consumption was the cause of but part of the 20 per cent. of popular mortality attributed, justly enough, to chronic pectoral, and mostly pulmonary disorders, then on that supposition the proportion of deaths referable to pulmonary consumptions in the old and looser sense is now much increased, since the present mortality from true phthisis in the stricter sense of Laennec, is held by the high authorities above-named to amount to 1 in 5, or thereabout; being the same percentage of mortality as was previously attributed to several chronic pectoral affections, of which true phthisis constituted but one, though no doubt the principal, species.

"Now the doctrine maintained by Young is true, although for practical purposes, perhaps, obsolete. In addition to the facts advanced by that very learned writer, in support of his opinion, others concur in the same conclusion—amongst the rest this unpublished observation of my own. Between May 1821 and May 1835 there have been recorded in the Journals of the Mary-le-bone Infirmary, under 18 principal heads of disease, 3753 deaths, exclusive of about 640 deaths from minor causes. Of the total, amounting to nearly 4400 deaths, 991 (viz. 542 males, and 449 females) were deaths from phthisis, (and mostly in the larger sense of the word, as used by Dr. Young) which gives a per centage of 22½ on the whole mortality of the fourteen years. This observation fully bears out Dr. Young's estimate, as well as those of Drs. Wells, Woolcombe, and Heberden, and other English estimates anterior to 1819. But the limitation of the term phthisis, by Laennec, to tubular phthisis, on account of its greater fatality, and more extensive distribution as compared with other chronic and strictly pulmonary diseases, while it has narrowed the field and rendered more precise the objects, has at the same time made more difficult the means of inquiry. And at the present time it is difficult to place confidence in any results not obtained by diagnosticians of unusual skill during life, or by careful *post-mortem* examinations by practised pathologists: so that, admitting the general correctness of Woolcombe, Young, &c., I am much less disposed to coincide in the views of the medical statisticians who have written subsequently to the general promulgation of the discoveries of Avenbrugger and Laennec in the great work of the latter. There is, in truth, much reason, and with the highest respect for the very able and distinguished writers above named I say it, to suspect the data on which their calculations are founded. How small a proportion, in fact, of the mortality included in those estimates has arisen from disorders proved strictly phthisical, or even pulmonary, by competent diagnosticians during life, or by proper inspection *post-mortem*. For my part, I have no doubt at all that the greater part of the so-called pulmonary consumptions in persons above 30 years of age has been, in reality, mere chronic catarrh, complicated with disease of the heart, and emphysema of the lungs. But whatever may be thought on that point, as a general position, it is very certain that the proportion of morbus cordis included in the 520 and odd cases here referred to, much exceeds that of phthisis. The cases of heart disease amounted to 170 (to speak in round num-

bers,) and those of phthisis to less than half, or about 80. Now this difference has not been caused by any selection at admission, or at the time of *post-mortem* inspection. Every proper case was admitted on application, and every case that proved fatal, and for which permission could be obtained, was examined without distinction of disease. That it was not mere accident seems probable from the fact, that in the case of either sex the preponderance was in favour of heart disease. In the case of the males, the ratio of phthisis to morbus cordis was :: 2 : 3; and in that of the females it was nearly :: 6 : 7. I confess it seems to me more probable that the difference between the generally received proportion of disease of the heart to other diseases, especially phthisis, and that obtained by myself, is owing to this: viz., that on the one side, the diagnosis has been, in a large proportion of cases, conjectural during life, while after death no sufficient examination has been made; and that on the other side, the diagnosis has been always based on anatomical as well as instrumental examination. This, I say, seems more probable than that the result at which I have arrived, with the aid of unusual facilities and precautions, should be so far wide of the truth as to represent a disease that really amounted to one-fifth of the whole fatal disease of the country, as one half less frequent, even in a single district, than another disease of supposed comparatively rare occurrence. Whatever also, it is to be noticed, may be the effect of indiscriminate admission and protracted residence, it is common to both diseases, so far as my observations are concerned, and cannot be supposed to affect the ratio: so that on the whole, when I recollect the numerous diagnostic errors into which I have myself fallen in pectoral diseases, and those which I have known committed by other practitioners, and call to mind the difficulty, in general, of accurate diagnosis in the same class of disorders; remembering also the recency of the promulgation of the invaluable mechanical diagnosis of Avenbrugger and Laennec, and the confusion not yet sufficiently remedied of several distinct diseases being classed under the one name of *consumption*, or *decay*, and its synonymes: viz.—

“1. Chronic bronchitis, concurring in scrofulous and cachectic subjects, with loss of flesh and some fever—

“2. Chronic cough, complicated with, and rendered inveterate by hypertrophy of the bronchial ramifications and dilatation of the air-cells—

“3. The same, complicated with, and rendered incurable by morbus cordis; generally on the left side, sometimes on both sides of that organ—

“4. True phthisis, which is always complicated with bronchitis, and pretty frequently with considerable hypertrophy of the heart—

“5. Glandular marasmus in children, without, in many cases, any strictly pulmonic disease;—

When I recollect those facts, I cannot avoid feeling very sceptical as to the alleged paramount importance of true phthisis, and suspecting that in male adults, at least, the most frequent of all fatal chronic disorders of these islands is disease of the heart. In this, perhaps rash assertion, I have the satisfaction of finding that I go but one step in advance of one of the ablest practitioners, and largest and least fanciful observers, that have especially studied the pathology of the heart. Baron Corvisart affirms without hesitation, that the most frequent organic diseases, except pulmonary consumption, are those of the heart; and that death from cardiac lesion is much less rare than from lesion of either the brain, the stomach, the liver, the spleen, or the kidneys, or, perhaps, from the diseases of all those parts together.

“Before passing on to the next topic I would dwell a moment on a remarkable contrast between morbus cordis and phthisis, in their relations to age, which is apparent in the table, and which is both curious in itself, and pertinent enough to my present argument. If, on the male side of the table, we compare the distribution of morbus cordis with that of phthisis, we find a striking contrast. The per centage proportion of morbus cordis to the total number of cases, including phthisis and morbus cordis, at each interval of age, is as follows:—for the first, from 15 to 30, it is 21 per cent.; for the second, it is 36; for the third, it is 40½; and for the fourth, it is full 42 per cent. Whereas for phthisis the

distribution changes in an inverse manner, being for the first age 45 per cent.; for the second, 28; for the third, 20; and for the fourth, 10 per cent. only; not more than one-fourth of what it was before 30. Then, on the female side, we have results agreeing sufficiently with those just stated on the male to render it probable that there is something more than chance in the matter. On the female side we obtain the following facts:—*morbus cordis* gives for the ages 15 to 30, 15 per cent.; from 30 to 50, 17 per cent.; and from 50 to 70, the ratio rises to 29 per cent., and, above 70 years, to 33½ per cent.: while on the female, as well as on the male side, phthisis seems to decline with age, being for the first interval of age 24 per cent.; for the second, a little more than 17 per cent.; and for the third, about the same, 16·4; and for the fourth, only 5 per cent. Now the conclusion to which these facts lead, viz. the superior prevalence of *morbus cordis*, as compared with true phthisis, at advanced ages, is confirmed by several passages in the classical work of Sir James Clark, especially by statements illustrating the influence of sex and age in the production of phthisis. In Chapter VIII tables are given, exhibiting the mortality from phthisis in persons above 15, in seven cities of Europe and America, which show that in almost each city there is a pretty uniform decline in the ratio of deaths from phthisis, from 20 years to extreme age; and the facts furnished by the excepted city, viz., Berlin, are at least a century old, being taken from Süssmilch. In Edinburgh the ratio declines from ·285 at 20 years to ·052 above 60 years; at Nottingham, from ·416 to ·017, in the same period of time; at Chester, from ·245 to ·054; at Carlisle, from ·290 to ·097; and at Paris, according to Louis, from ·325 to ·042; while the general average decline was from ·285, or 28·5 per cent., at 20-30, to ·078, or 7·80 per cent. above 60.

“The following unpublished table, deduced some time since by my brother, Dr. G. Clendinning, now not in the profession, from observations registered at the Mary-le-bone Infirmary, confirms the results to which Sir J. Clark’s inquiries have led him.

“Of 1044 deaths from phthisis occurring in the workhouse and infirmary, jointly, of the parish of Mary-le-bone, between May, 1821, and December, 1835, the distribution according to age was as follows:—

	Number of Deaths from Phthisis.	Per centage Proportion at each Age.		Number of Deaths from Phthisis.	Per centage Proportion at each Age.
Under 5 years	70	8·33	From 50 to 60 years	121	11·59
From 5 to 10 "	17		" 60 " 70 "	97	9·29
" 10 " 20 "	53	5·08	" 70 " 80 "	45	4·31
" 20 " 30 "	247	23·66	" 80 " 90 "	7	0·67
" 30 " 40 "	223	21·36			
" 40 " 50 "	164	15·71	Total	1,044	100·

“According then to the above, and Sir James Clark’s table, the distribution of phthisis according to age is nearly such as I have stated, viz., phthisis declines in frequency soon after puberty, and has been comparatively rare in middle life; when it is for the most part superseded, as I conceive, in frequency and fatality, by *morbus cordis*; and in extreme age it has disappeared nearly altogether. It is to be regretted that, with respect to *morbus cordis*, I am precluded from producing a similar confirmation of my results, partly owing to the frequent exclusion of aged people from hospitals, and partly owing to the neglect of instrumental means of *post-mortem* diagnosis, and the confidence misplaced by pathologists in their manual and visual skill.”

61. *A Statistical Inquiry on Fever.* Dr. A. S. Thomson has collected and published in the *Edinburgh Medical and Surgical Journal*, for July, 1838, some very interesting statistical information respecting fever in Great Britain, and has endeavoured to ascertain from these sources the prevalence, susceptibility, intensity, and prognosis of the disease. The details are too copious to be inserted entire,

and do not admit of abridgment, but the following are the results as summed up by the author.

1. That the annual ratio of deaths from fever in London, have decreased since the commencement of the 18th century.
2. That the susceptibility to be attacked by fever is greatest among individuals under 10 years of age, and from 20 to 30.
3. That the period of life during which the highest ratio of mortality occurs from fever is from 40 to 50.
4. That there is no very apparent difference in regard to one sex being more susceptible to fever than the other.
5. That the annual ratio of deaths by fever is nearly twice as great among the male as the female population.
6. That there is about 1 death for every 15 persons attacked by fever.
7. That the intensity of fever increases with the age of the patient about 34 per cent. every decennial advance in life.
8. That attacks of fever are one-third more intense among males than females.
9. That fever is most prevalent from July to December inclusive.
10. That the intensity of fever is much greater during January, February, March, April, and May, than at any other part of the year.
11. That during those months fever is most prevalent, the temperature and quantity of rain is considerably greater than during those months fever is not so prevalent.
12. That during those months fever is most intense, the temperature and quantity of rain is comparatively low.
13. That medical treatment has a powerful effect in lessening the danger or number of deaths from fever.
14. That early medical treatment shortens the duration of fever.
15. That the mean duration of fever among individuals under 40 is shorter than among those above that period of life.
16. That the general prognosis of fever is favourable, there being 14 chances to 1 that the patient will recover.
17. That the prognosis of fever becomes less favourable as the patient is advanced in life, the intensity of the disease being nearly twice as great at 41 years of age as at twenty-one.
18. That the prognosis of fever is one-third more favourable among females than males.
19. That the prognosis of fever is more favourable from June to December, than from January to June.
20. That the prognosis of fever is one-half more favourable among patients who come under medical treatment before the 7th day of the disease, than those who are admitted at a later period.
21. That the prognosis of fever is unfavourable when there are cerebral or thoracic complications.
22. That the second week of fever is the most dangerous. Out of 1000 cases passing through this week 82 died.

62. *Proportion of the Sexes at birth in legitimate and illegitimate children.* The fact of there being born a greater number of male than of female children is a curious and inexplicable one, but it is still more curious that the number of males is greater among children born in wedlock than among illegitimate children. In France, it appears from the registers of fifteen years from 1817 to 1831, which embrace more than ten millions of births, the absolute proportion of boys to girls is, 106.5 of the former to 100 of the latter. In the legitimate children the proportion is 106.7 boys to 100 girls; and among the illegitimate children 104.8 boys to 100 girls. The results are the same in Austria, Prussia, Sweden Wurtemberg, and Bohemia as in France, as is shown by the statements published by Professor Bernouilli of Basle.

The list of births and deaths in Berlin for the month of March, 1838, exhibit the same fact. Thus there were born this month 875 infants, of which 472 were boys and 403 girls, The number of illegitimate births were 129, of which 68 were girls and 61 boys.—*Bulletin Général de Thérapeutique*, August, 1838.

ANIMAL CHEMISTRY.

63. *Presence of Quinine in the Urine of persons who had taken it in large doses.*—The presence of quinine in urine was first detected by M. Lavallee, in 1836. More recently, (May, 1838,) M. QUEVENNE detected this substance in the urine

of a patient affected with malignant intermittent fever, to whom it had been given in large doses.—*Bull. Gén. M. Thérap.* Aug. 1838.

64. *Analysis of the blood of a diabetic patient—detection of sugar in it.*—Until very recently it was supposed that the serum, even in the most violent and lengthened cases of diabetes, did not contain any sugar. Some late experiments of Mr. M'Grigor, of Glasgow, seem to show, however, that sugar is present, not only in the blood and urine, but also in several secretions and excretions. Ambrosiani says he has succeeded in separating sugar from the serum of diabetic blood in a crystallizable state.

Dr. G. O. REES, in an interesting article in *Guy's Hospital Reports* for October, 1838, has given a process by which he has obtained sugar of considerable purity from the serum of a diabetic patient. The process is as follows:—"The mass of blood* is to be evaporated to dryness, over a water bath; the dried mass to be comminuted and digested for several hours in boiling water; the aqueous solution is to be filtered off, evaporated to dryness, and the dried residuum digested in alcohol of sp. gr. 0.825; the alcohol solution thus formed is to be filtered, or carefully poured off, evaporated to dryness, and the dry mass treated several times with rectified ether, which dissolves out urea, and also some fatty matter, leaving behind the sugar, in admixture with osmazome and chloride of sodium; this mass, on being dissolved in alcohol, and the solution allowed to evaporate spontaneously in a flat glass dish, affords mixed crystals of alkaline chloride and diabetic sugar; which are easily distinguishable from each other, and allow of being separated mechanically, by shaking them up in alcohol, when the chloride sinks; and the sugar, being principally collected above, may be removed for examination by careful use of the spatula; the alcohol must not, of course, be allowed to remain long in contact with the crystals, as it would re-dissolve them.

The following is the analysis of 1000 grains of diabetic serum obtained for Dr. Rees by Dr. Bright. The sp. gr. of this patient's urine was 1048; and the contents of the serum as follows:

Water	-	-	-	-	-	-	90.850
Albumen (yielding traces of phosphate of lime and oxide of iron, on incineration)	-	-	-	-	-	-	80.35
Fatty matters	-	-	-	-	-	-	0.95
Diabetic sugar	-	-	-	-	-	-	1.80
Animal extractive, soluble in alcohol, urea	-	-	-	-	-	-	2.20
Albuminate of soda	-	-	-	-	-	-	0.80
Alkaline chloride, with traces of phosphate	}						4.40
Alkaline carbonate, and traces of sulphate, the results of incineration							
Loss	-	-	-	-	-	-	1.00
							1000.00

Dr. Rees would wish the proportion of diabetic sugar given above to be considered merely in the light of a close approximation, as it is impossible to separate it completely from impurity; and, moreover, the loss sustained by it during manipulation, which must be considerable, does not admit of estimation.

It will be observed, on comparing this analysis with that of the serum of healthy blood, that we have here a great excess of matters soluble in alcohol, while the albuminate of soda is rather less than in health. The alkaline salts are also very small in proportion, being only 4.40 grs. in 1000 grs. of serum while in health they amount to from 7 to 8 grs. per 1000.

* 12 ounces were used in his experiments.

MISCELLANEOUS.

65. *Animal Magnetism in London.*—In a former Number of this Journal, (August, 1838,) we mentioned that animal magnetism was gaining numerous proselytes in London. The impression which it made there, seems to have been principally due to the ingenuity of two accomplished actresses, Elizabeth and Jane O'Key, though something must be ascribed to a very considerable degree of credulity (or as our phrenological friends would say a large development of the organ of wonder) in those who witnessed the exhibitions of those women at the University Hospital. The tricks of these actresses have now been fully exposed by the experiments of Mr. Wakeley, the editor of the *Lancet*, as will be seen from the following statement:

Experiments on Elizabeth O'Key.—After some of the often-repeated experiments had been performed by Dr. Elliotson, with various results, it was proposed by the Doctor that the metal, *nickel*, should be used, the effects of which he said had been found by him to be, and would now prove to be, quite astounding. A piece of nickel was produced by the Doctor, of about three-quarters of an ounce in weight, and of an oval form, and also a piece of lead, of nearly the same shape and smoothness, but somewhat larger. Elizabeth O'Key was then seated in a chair, being, as was stated, in the "ecstatic delirium." A piece of thick pasteboard was placed in front of her face, and held in that situation by two of the spectators. By this contrivance it was rendered impossible that she could see what was passing either below or in front of her. Mr. Wakeley being seated directly opposite to the girl, and at a short distance from her, received the lead and nickel from Dr. Elliotson, in order that he might rub the two on her hands in such a manner that from merely touching the substance, or from its form, it would be impossible for her to decide which of the two was being used. Dr. Elliotson had, as has been stated, previously described the effect of the magnetic nickel to be of a most extraordinary character, and said at the same time, with much earnestness, that the lead might always be applied with impunity, as no magnetic effect ever resulted from the application of that metal to the skin.

The substances were then applied to the hands of the girl. First the lead was applied to each hand, alternately, but in a manner which might have led the girl to believe that both metals were used. No effect whatever resulted from these applications. After the expiration of a considerable period, the nickel was employed, having been received from Dr. Elliotson, who for some time had held it in his hand in order to charge it strongly with the magnetic influence. By this proceeding the metal was necessarily heated to the temperature of the skin. Mr. Wakeley had previously thought it right to hold the lead in his hand, and heat it in a similar manner. In consequence of this obviously necessary precaution, no indication was offered to the mind of the girl by which it could be guided, during the experiment, by the mere temperature of the substances which were employed.

The nickel was now used, precisely as the lead had been applied. There was a pause. The expected results did not appear. After, probably, a minute had elapsed, the lead was again used; and then again; and after the last application of the nickel, the lead having been repeatedly employed during the interval, the face of the patient became violently flushed, the eyes were convulsed into a startling squint, she fell back in the chair, her breathing was hurried, her limbs were rigid, and her back and abdomen assumed the position which are produced in an attack of *opisthotonos*. In this state she remained during nearly a quarter of an hour. Certainly that time elapsed before the condition of the patient appeared to warrant a repetition of the experiment. A short conversation then ensued between Dr. Elliotson and Mr. Wakeley, as to the cause and reality of the symptoms. The Doctor contended that the effects clearly resulted from the application of the magnetised nickel, but that they had not come on with their usual rapidity. Mr. Wakeley expressed a contrary opinion, and wanted to know of what value the experiments could be if there were nothing

like certainty in the results, and if the effects were to be attributed to one metal so long after another had been employed, as on that occasion. Ultimately it was determined that another experiment should be tried with the nickel, Dr. Elliotson suggesting that that metal, in its magnetised state, should alone be employed.

Mr. Wakley was now again the operator, and before the experiment was tried he stated, privately to Mr. Clarke, that instead of using nickel only, he would not on this occasion employ any nickel, and desired Mr. Clarke to take notice of the fact, that he would put aside the nickle, unperceived by any other person, the moment that it should be handed to him by Dr. Elliotson, and before either of his (Mr. W.'s) hands should be allowed to come in contact with those of the patient. The experiment was then again performed. Mr. Wakley had taken the nickel from Dr. Elliotson, and put it on one side, when it was taken, unseen by any other person, by Mr. Clarke, who placed it in his waistcoat pocket, and walked with it to the window, there remaining during the performance of the experiment. Mr. Wakley employed both hands, but his fingers were so held that it was impossible for any person excepting the operator to know what he was holding. Presently, on applying the substance which he held in his left hand to the right hand of the patient, the pasteboard being again held before the eyes of the girl, Mr. Herring, who was standing near, said, with much sincerity of feeling, in a whisper, but loud enough to be heard at a short distance, "Take care; don't apply the nickel too strongly." Scarcely had these words escaped from his lips, when the face of the girl again became violently red; her eyes were fixed with an intense squint; she fell back in the chair; a more evident distortion of the body ensued than in the previous paroxysm; the contractions of the voluntary muscles were more strongly marked, producing a striking rigidity of the frame and limbs, and the shoulders were thrown back to the utmost, the spine displaying as complete a bow as in an attack of opisthotonos: in a word, the severity of all the symptoms appeared to have undergone marked increase. Dr. Elliotson again observed, that "no metal other than *nickel* had ever produced these effects; that they were most extraordinary;" in fact, that "they presented a beautiful series of phenomena." This paroxysm lasted during upwards of half an hour, and was admitted by all who were present to be much more violent than the one which had preceded it.

Mr. Wakley now suggested that the girl should retire into an adjoining room, where her sister was waiting, as he was anxious to make a statement to Dr. Elliotson in her absence. The girl objected to depart, and therefore her sister was called from the adjoining room, and the gentlemen retired into that room. Mr. Wakley then said to Dr. Elliotson, "that he felt it to be his duty to state, that the Doctor was entirely deceived respecting the character of the experiments and the cause of the symptoms. That all present had been witnesses of the violent effects which appeared to result from the application of the nickel to the hand, and had heard Dr. Elliotson state that such extraordinary symptoms could be produced by no other magnetised metal, whereas he had not used nickel on that occasion; he had not even *approached* her with it; but that on the instant that it was handed to him by Dr. Elliotson he had put it aside, unobserved, and had merely rubbed upon the skin of the girl a piece of lead and a farthing, which he had respectively held in either hand, but that the metals were so held that he has certain that no person could discover what he was applying."

Dr. Elliotson replied, that "he saw the nickel used; that Mr. W. must have touched her with that metal without knowing it himself; that he was certain of the fact, and that he was positive that the effect could be produced in no other way."

Mr. Wakley then said that there was a gentleman present who could confirm the accuracy of his statement—a witness in fact, who had the nickel at that moment in his pocket, and had stood with it at the window during the whole of the time that he was applying the lead and the farthing to the hands of the girl.

Dr. Elliotson again declared that this was impossible, when Mr. Clarke produced from his pocket the piece of nickel, and said that it had really been there

during the whole of the experiment, and that it had not been near the girl during the entire trial.

After a somewhat lengthened conversation Dr. Elliotson suggested that the experiment with the nickel should be tried once more. This proposition was consented to; and during the performance of the experiment Dr. Elliotson remained in the other room, while Mr. Wakley, Mr. Herring, and Mr. Clarke, went to the patient to renew the operation. Again was the nickel handed privately to Mr. Clarke, and the lead and farthing were applied as before, with the pasteboard held in front of the patient's face. In three or four minutes there was a re-appearance of the flushed countenance, the staring eyes, the rigid limbs, the bent back, and the distorted frame although *no nickel had been used*—nothing, in short, but the lead and the farthing.

A report of these results was conveyed to Dr. Elliotson and the gentlemen who had remained with him, when Dr. Elliotson said that the occurrence was most extraordinary; that he could not at that moment account for it; and that he had no doubt that an explanation could soon be found which would remove all appearance of anomaly in the results. He would, he said, again suggest that the nickel should be re-employed; and as this request was so urgently made, Mr. Herring, Mr. Wakley, and Mr. Clarke, again visited O'Key, for the purpose of proceeding with the trial, but instead of using the nickel, the lead and farthing were again employed, with the same results as before. There was another fit. Afterwards, when the girl had recovered from the apparent paroxysm, Mr. Wakley suggested that the magnetized nickel should be rubbed over both hands freely, on the skin, in different places, but not exactly in the manner in which the lead and farthing had been employed. No effect was produced by this application of the nickel.

On hearing a further report of the effects which appeared to arise from the use of the lead and the farthing, and the absence of effects when the nickel was really used, after the other experiments had been concluded, Dr. Elliotson candidly admitted that he "could not explain how the thing had occurred; it was most extraordinary, but still he had not the slightest doubt that the whole would yet admit of a satisfactory explanation."

Mr. Wakley, on the other hand, contended that what had been done was, in his opinion, perfectly conclusive with reference to the character of the supposed phenomena, and that he did not consider that a single additional experiment could ever be necessary, in connection with such an inquiry.

Similar experiments, and with similar results, were again made on the 17th, and Jane O'Key, the other sister, also subjected to scrutinizing trials with mesmerized water, sovereigns, &c. &c. It is sufficient to remark, that on proper precautions being used, all the experiments totally failed.—*London Medical Gazette*, September, 1838, and *Lancet*, September, 1838.

66. *Animal Magnetism in Paris*.—Animal magnetism has met with as severe a blow in Paris, as from the preceding article, it will be perceived, it has in London.

During the discussion which ensued on the report of the last commission appointed by the Academy of Medicine, M. BURDIN, a member of the Academy, offered a prize of 3,000 francs "to any one who could produce a person capable of reading without the assistance of eyes, or of light, or of the touch. The decision was to be left in the hands of a commission to be appointed by the Academy; but only one candidate for the munificent premium appeared. A Dr. Pigeaire, of Montpellier, wrote that his daughter, a girl of fourteen years old, could accomplish the feat, when placed in the magnetic state by her mother. A commission, consisting of MM. Double, Husson, Chomel, Morreau, Louis, Dubois (d'Amiens), and Gerardin, was therefore at once appointed to inquire into the case, and Dr. Pigeaire came up from Montpellier to Paris.

"M. Burdin allowed, at the request of Dr. Pigeaire, that the book from which his blind-folded daughter was to read, might be placed in the light, and that touching it might be permitted, so far as that sense was not made supple-

mentary or subsidiary to sight; and he left it to the commission to decide whether the bandage employed to blind-fold the patient with, was satisfactorily capable of excluding all light. The father presented one to the commission, with an offer of a thousand *sous* to any one who, in the normal state, could read with it on. It was to consist of three pieces of black velvet: the eyes were to be padded over with cotton, and then covered below with a double band of fine linen. If this kind were satisfactory, they might themselves have another made, but it must be of the same form, lest a disturbance of the habit which the girl had fallen into, might prevent the full development of the clairvoyant state, and of the same materials, because it had been found that velvet did not obstruct the passage of the mesmeric fluid. If, however, such another was made, it would be necessary, wrote Dr. Pigeaire, that his daughter should make first a trial of it, in presence of the President of the Commission and the Secretary of the Academy; and if Madame Pigeaire was satisfied with it, it should then be delivered into the custody of the President, to be kept under lock and key till the commission met to make their decision. He proposed also that the commission should be divided into two parts; that if a first experiment failed, four trials should be allowed in each series; but that if one experiment succeeded, the commission should for that time consider its mission ended. The lower edge of the bandage, he granted, should be glued with silk to the cheeks and sides of the nose; and the book was to be covered with a flat piece of glass, which must be allowed to lie quite steady, and to keep the book quite open.

“A meeting was now fixed, and a bandage was offered by the commission to M. Pigeaire, in accordance with what M. Burdin required of them. But he refused it, saying that it was necessary there should be no space between the bandage and the eyes, which ought to be in immediate contact. They therefore offered to let him pad it, so that it might exactly fit and come in contact with the eyes: he refused, and said that he had tried numerous descriptions of bandage for blindfolding his daughter in vain; that all had produced bad symptoms in her, when in the somnambulic state, except his own, which he now offered, and which was the only proper one to be used, and could not be replaced. The commission then offered that she should wear the bandage which he presented, provided she were covered by a moveable veil, which should intervene between her face and the book she was to read from. This, however, he also declined, on the ground that he had reason to believe that she read with the nerves of her face; and it was then suggested that a screen should be adapted with two conical appendages which should permit the light reflected from the book to fall on her cheeks, but should prevent it from coming to the lower edge of the bandage; but this condition he in like manner refused to submit to.

“He answered further to the inquiries which were made, that she would begin to read in from a quarter of an hour to an hour and a half after the application of the bandage, or the commencement of the magnetic state; that it was necessary the book should be placed either on her knees or on the lath immediately before her; and that she must be allowed to place it as she liked, but that she could never read from it if it were held directly before her on a level with her eyes. They observed that when the bandage was put on over the girl's eyes, she used great exertions in moving the muscles of her face and lips, as if to displace it; but that, he said, was sometimes her habit, when in the magnetic state, though she could see just as well when she did not do so as when she did. He added, that at one time she used to be able to read from a book which was shut up in a box; but when the commissioners said they should deem it perfectly satisfactory if she would do that, he answered that he could not be answerable for her possessing the same power now. He said, too, that it would throw her into convulsions if the fingers of one of the commissioners were placed on the lower edge of the bandage over her eyes while she was trying to read.

“Hearing all this, the commission declined the inquiry, because M. Burdin's demands were not at all complied with, the bandage for blindfolding not being in their opinion sufficient for the purpose, and the position in which the book

was to be placed being favourable to the transmission of light to the eyes under the lower edge of the bandage.

"The report detailing the above proceedings, and from which our abstract of them is taken, was read before the Academy on the 14th ult., when M. Cornac, who had been present at the meeting between the commission and M. Pigeaire, said that Madame P. had, in his presence, placed the several pieces of velvet in succession over her daughter's eyes, and had then glued two broad hands of English taffetas from their lower edge to the cheeks, and two more by the sides of the nose, in the angles between it and the eyes. The girl being then magnetized, he took a volume of Malherbe's works from his pocket, and placed it before her in the manner required. She grew impatient, and appeared annoyed and harassed; at last she read slowly and with difficulty, two couplets of an ode, all the time frequently putting her hands to the bandage, and working actively and strongly with the muscles of her cheeks and lips. The bandage was then removed from above downwards; and if, said M. Cornac, we could not see any gaps in it, we will not assert that there were none. He himself, however, could not distinguish light from darkness when it was put over his eyes; and M. Gerdy could only tell that distinction. M. Velpeau was able to see under its lower edge sufficiently to distinguish a card, the ace of diamonds. M. Du-bois said that it was at the first glance evident that light could be admitted to the eyes under the edge of the bandage for blindfolding, and that there was ample confirmation of this in the refusal to permit it to be kept close by the fingers, or be covered with the screen."—*London Med. Gaz. for Sept. 1838.*

67. *Vaccine Virus fresh from the Cow.*—Not long after the discovery of vaccination, it was suggested, that the virus, in its transmissions through numerous human systems, might become deteriorated, and the protective power it afforded, thus rendered imperfect, or altogether null; and it was recommended that it should at certain times be regenerated by resorting again to its original source.

As mentioned, however, in our last No., the original source was lost almost immediately after it was discovered, and it is only within a short period that it has again been met with. In addition to the localities where we have already stated it to have been found, it has very recently been discovered in Gloucestershire, England.

Mr. ESTLIN, of Bristol, who has in vain been endeavouring for several years to renew the lymph from its original source, has obtained some from this last locality, through the kindness of a friend who sent him some taken from the hand of a person who had contracted sores by milking diseased cows. Mr. Estlin has since employed this virus, and has distributed the lymph thus obtained with a desire to propagate it.

A portion of the lymph from this source, ten or twelve removes from the cow, has been received in this city by Dr. Dunglison, and has been employed by Dr. Bridges, one of our city vaccine physicians, who seems satisfied of its genuineness. Some has likewise been received in New York and Boston, and been used there. What confidence is to be reposed in this new virus can only be determined by experience.

AMERICAN INTELLIGENCE.

Case of Extirpation of the Parotid Gland. By J. RANDOLPH, M. D.
Lecturer on Surgery.

We are happy to state that this operation was successfully performed on the 19th of December, by Dr. J. Randolph, in the presence of Drs. Coates, Harris, Norris, J. Rhea Barton, W. E. Horner, and a large audience of physicians and students of medicine. A friend who was present has been so kind as to furnish us with the following account of the case.

Dr. Randolph premised the operation by remarking, that the disease had existed for a year, and that the Parotid Gland was probably the organ affected, though this point could only be satisfactorily ascertained after the removal of the diseased mass. He stated that the tumour was in a state of rapid increase, which would augment the difficulties of the operation. With regard to the question, as to whether the Parotid Gland had ever been removed successfully, he gave as his opinion that it was an operation which had been frequently performed, not only in Europe, but in this country, and proceeded to mention the names of a number of surgeons who had reported cases. He stated that for a long time he had thought that a scirrhous, or indurated parotid gland, could be more readily removed than when in a healthy state, and mentioned that Dr. N. R. Smith coincided with him in this opinion.

In performing the operation, as the left parotid was the one affected, the head was inclined to the right side, and an incision made from the zygoma down to the edge of the sterno-cleido mastoid muscle, a second one at right angles to this, and the flaps dissected up. The facial artery was then secured, and an attempt was made to raise the lower edge of the tumour and secure the external carotid where it enters the gland; this was found, however, to be attended with so much difficulty, in consequence of the close adhesions, that it was determined to dissect it from its attachments from above downwards; in doing this it became necessary to secure the temporal and internal maxillary arteries, besides several others of smaller size; the carotid was cut, in dividing the last adhesions of the tumour, and instantly secured by means of Dr. Physick's needle and forceps. The external jugular vein was cut and secured at each end. The periosteum covering the angle of the jaw was absorbed, and the adhesion to the maseter muscle was so strong that part of it was removed with the tumour.

The operation lasted 59 minutes, but little blood was lost and the patient bore it remarkably well.

After a careful examination of the parts, Dr. Randolph stated to the class that it was the unanimous opinion of the Surgeons and Anatomists present, that *the Parotid Gland was completely extirpated*. The ligatures have all, except one on a small vessel, come away; the cavity is filled with healthy granulations, and the patient's general symptoms are perfectly favourable.—January 15th, 1839.

Loss of Testicle. By SAMUEL WEBBER, M. D., of Charlestown, N. H.

A lad of eighteen was in the woods mending a brush fence; wishing to lop some branches from a tree, which stood in the line of the fence, he got upon the top of the latter and struck at them with his axe. The support upon which he stood gave way suddenly under the effort, and he came to the ground. In his descent, the scrotum, as also the contained testicle of the left side, was caught and penetrated by a sharp projecting snag. As his descent continued, the testicle, impaled upon the point of the snag, was torn from its envelope, stretching the cord, as the youth said, half a foot or more, when this last broke and he fell fainting to the ground. After laying, as he supposed, half an hour at least, he came to, and getting upon his legs set out for the nearest house, about a mile distant. The bleeding was considerable, and from the exhaustion of this and the pain consequent upon motion, he fainted once or twice before arriving at the house. Here he was kindly received, placed upon a bed, his wound bathed with cold water, and a physician sent for. Upon my arrival, the bleeding had entirely ceased, and most of the pain. The wound of the scrotum in its corrugated state, was about an inch long, and a small, firm clot of coagulated blood had formed about the extremity of the divided cord. This it seemed unnecessary to disturb, and nothing more was done than to apply a compress of lint, a few strips of adhesive plaster, and a suspensory bandage, enjoining quietude in the recumbent position, and light diet. In a few days he recovered without any particular difficulty.

On the use of Tobacco in certain cases.—The following extract from a letter we have lately received from our venerable correspondent, Dr. ALEXANDER SOMERVAIL, of Virginia, may furnish some useful practical hints.

“I have suffered from diseased nerves in various ways. Some, such as I have never heard of, and which has introduced an application that I think may be useful in many distressing circumstances. The points of the two middle toes on each foot are affected with a burning sensation, increasing every afternoon, rendering washing painful, sometimes much so with a sense of swelling and weight, very unpleasant; the healthy feeling gone; this threatens my fingers too—when looked at, the point is a little red and painful to touch—it came into my mind to apply a snuff plaster; this produced immediate relief; but I cannot leave it off for more than a week, before the burning returns. Now one toe only resists this application, but is much relieved by it. I have often used this where I used to blister; lately I applied a twist of tobacco softened by boiling, but so as to retain the water, to the side, in a case of pain in the side, with cough, fever, &c., in an aged woman, with speedy relief, and by the help of other remedies, recovery followed where I had no right to expect it. The tobacco applied thus, is more powerful than the plaster. I have used this since the fever of 1815, occasionally—no nausea, &c. is produced, unless the cuticle is abraded; in that case we cannot use the tobacco either way. I had a lady last June, with severe pain in the face, over the antrum; the plaster removed it, and was worn a couple of weeks. Perhaps Tic-doloureux may be relieved by it. A negro man, in hewing timber, struck the corner of his axe into the inside of his knee, which lamed him for two months. When I saw him the cut was healed; the knee enlarged, the leg bent, very painful, and could not be extended. The cut appeared to have touched the tendon of the flexor. I applied the plaster; the pain soon mitigated; he got better daily, and soon admitted the use of a splint to extend the contracted muscles, and is well.”

“P. S. The snuff plaster was first prepared by using snuff in place of cantharides, in the preparation of blistering plaster; but as that is not adhesive enough, I have left out the wax in that plaster, and in its place put in empl. lytharg.”

Successful division of the Adductor Longus Femoris Muscle for Deformity and loss of motion in the inferior extremity.—Professor PAUL F. EVE has successfully divided, (as we learn from the *Southern Med. and Surg. Journal*,) the adductor longus femoris muscle for the cure of a deformity of the left lower limb, in a robust, muscular man 22 years of age. The deformity, which is not clearly described, seems to have consisted in a shortening of the left lower limb, of about one inch, the thigh being flexed on the pelvis; “the foot turned inwards, and the whole limb inclined in this direction; the foot could not be carried out farther than about twelve inches from the median line of the body.” In the internal and upper third of the thigh, there was a *hard substance*, feeling like hempen rope, situated just under the skin. It was about four inches long by one and a half broad. It could be isolated from the surrounding tissues, all of which appeared normal. It was taken for a fibrous degeneration of the adductor femoris muscle, and the shortening of the limb was ascribed to this degeneration.

The disease was of eight years standing, and was attributed to exposure; the patient had, in sporting, sometimes lain all night on the wet ground.

The operation was performed on the 9th of October, in the following manner:—

An incision was made, commencing at the pubis, and cutting upon the internal edge of the affected muscle and extending about five inches in a semilunar direction. The surface of the adductor longus was then exposed, and cautiously divided with the knife and a pair of scissors, about three inches below its origin from the pubis. The upper portion was found to be converted into a fibrous tissue, which slightly grated under the knife, but the portion below the section contracted, so as to separate the cut edges of the muscle about an inch. The muscle was not degenerated throughout its whole extent, but appeared to be in a healthy condition an inch below the point at which it was divided. Two small arteries required a ligature. The wound in the skin was closed by adhesive plaster, and a compress and roller completed the dressing. The patient was put to bed, and a two pound weight attached the next morning to the left foot, and allowed to hang out of the bed clothes over the back of a chair, so as to make traction in a horizontal direction.

There was no material alteration in the length of the limb, until the next day, when it commenced gradually elongating, and at the end of the week this limb had acquired the same length as the sound one.

On the fifteenth day after the operation, the patient walked with scarcely any impediment in his gait, and on the nineteenth day, the patient went home with his extremity of its natural length, and its motions nearly entirely regained.

The cure in this case is creditable to the skill of the surgeon; but the operation has no claim to novelty. The division of the sterno-mastoid muscle for the cure of wry neck, and of other muscles for the removal of similar deformities, is as well recognized a surgical resource, as is the division of the tendo Achillis for the cure of club foot.

Tumour at the base of the cranium, producing amaurosis, exophthalmos, and death.—Dr. S. LITTELL, Jr., one of our colleagues in the Wills Hospital, read before the College of Physicians, in December last, an account of an interesting case of this character. We transcribe it from the *American Medical Intelligencer*.

“J. B. aged thirty years, by profession a porter, of medium stature and robust frame, applied for admission into the Wills Hospital, in July of the present year. He was afflicted with amaurosis, not wholly complete, for he could still distinguish light from darkness, but there was a certain obtuseness of expression, which seemed to indicate its origin in some serious organic disease; and had it not been for the importunity with which it was urged, his application would probably have been rejected in consequence. He had recently been an inmate of the Pennsylvania Hospital, whence he had been discharged, as he stated, at his own request, that he might seek entrance into an institution founded with more express reference to the diseases of the eye: and I felt reluc-

tant to send him away, so long as any uncertainty remained of the curableness of his complaint. All doubt upon this subject was removed when time was allowed for a more thorough investigation of the case. He complained of severe pain in the two temples and over the head, aggravated towards evening to such a degree as to deprive him of rest during the greater part of the night; a copious secretion from the nasal cavities of an offensive mucus, passing through the posterior nares, was discharged by the mouth; and symptoms of gastric derangement were also present, the constitution manifestly sympathising with the local affection. Vision first began to be impaired in January, and several physicians had been consulted previous to his admission, the following March, into the Pennsylvania Hospital. He had been once salivated while there, and was now again under the alterative use of mercury. There was no assignable cause for the production of the malady: for though he had been addicted to onanism a year or more before his sight began to fail, this seemed inadequate to explain phenomena which evidently originated in organic mischief. Opium and the abstraction of blood by cupping procured sleep and afforded temporary relief; but had no effect in retarding the progress of the symptoms. The pain was felt over the whole head, but especially in the temporal and occipital regions; he breathed with difficulty through the nostrils; the amaurosis soon became complete, and the eyes unusually prominent. The discharge also grew more profuse, was sometimes mixed with blood, and on two occasions hemorrhage occurred: in one instance to an alarming extent. All hope of improvement from a longer sojourn in the hospital having been abandoned, he was discharged after a few weeks, and I continued my attendance at his home. The subsequent history of this melancholy case may be related in a very few words. The projection of the eyes steadily increased, the palpebra were gradually everted, and the globes nearly protruded from their sockets, and surrounded by the red, swollen and infiltrated conjunctiva, exhibited a sad and revolting appearance. The appetite of the patient, far from being diminished, was morbidly increased; the discharge continued, more puriform in character; a fungous excrescence could be felt in each nostril; but the pain, though still a constant subject of complaint, was happily masked by the attending stupor, from which, however, he could be readily aroused. For the last six or eight weeks of his existence, he was more or less delirious; his appetite decreased, failed altogether, and he became greatly emaciated as the fatal termination grew nigh. Though generally lying in bed, he was still able to sit up, or even to walk about the house; and what is remarkable, evinced a strong desire or craving for ardent spirits, which he had not been accustomed to use when in health; a symptom occasionally noticed as one of the earliest manifestations of insanity. The unfortunate man, reduced to the lowest degree of human wretchedness, a spectacle harrowing to the feelings of his attendants, and the object of compassion to every beholder, at length became comatose; and, after continuing in that state a few days, expired.

“The autopsy, made by candle-light, and under circumstances which precluded a very minute investigation, revealed the following particulars:—The first thing which arrested the attention, on looking at the corpse, was the unusual distance between the inner canthi of the eyes; which, being measured by my friend, Dr. I. Parrish, who kindly assisted in the examination, was found to be two inches and five tenths. On laying aside the calvarium, the vessels of the pia mater were observed to be uncommonly injected; and the cerebrum softened in its anterior lobes, particularly towards their lower portion, but in other respects not deviating from its normal structure. The brain being removed, a firm, irregular tumour was seen projecting from the base of the cranium into the sulcus between the anterior and middle lobes. It appeared to arise from the body of the sphenoid bone, and extended an inch or more in a direction upwards and backwards, pressing upon the optic nerves at their junction, and reaching as far on the right side as the surface of the pars petrosa, to which it was inseparably adherent. In order to obtain a more satisfactory view of its extent and connections, the frontal bone was taken away by sawing across its angular and nasal processes, thereby exposing the cavity of the orbit, and the upper half of the

tumour. The ramifications of the morbid production, which was at least equal in size to a small orange, were now observed extending into and occupying the neighbouring cavities, the orbits, sphenoidal and ethmoidal sinuses—and reaching below as far as the inferior turbinated bone. The delicate laminæ composing the ethmoid, still further attenuated by absorption, were situated in the centre of the tumour and entirely involved by it; the cribriform plate was absorbed in its posterior margin to a considerable extent, as were likewise the orbital processes of the os frontis; the whole presenting a sharp, jagged, and irregular outline. The frontal sinuses, which were greatly enlarged and prolonged into the orbital processes, were filled with a dark-coloured viscous secretion; on the left side, the thin shell of bone separating the sinus from the cavity of the orbit, had also been removed, leaving between them a communication several lines in diameter. The consistence of the tumour varied in different parts; above, and where it was connected with the petrous portion of the temporal bone, it was firm, semi-cartilaginous, and of a whitish colour; its section exhibiting a strong resemblance to that of a scirrhus mamma; beneath the cribriform plate it was softer, and in several places presented a medullary or encephaloid appearance; while the inferior division, which has been described as projecting into the nostril, was of intermediate density, and not unlike a polypous excrescence.

“The structure of the morbid growth left no doubt of its malignant character upon the mind either of Dr. Parrish or myself, but the precise spot in which it originated, is shrouded in greater obscurity; perhaps, however, it would be more consonant with all the facts of the case, to refer it to the sphenoidal or posterior ethmoidal cells.

American Medical Almanac.—Dr. J. V. C. Smith, the industrious editor of the Boston Medical and Surgical Journal, has prepared a useful little work, of which the above is the title. It contains a list of the medical schools in the United States, Great Britain, and France, with the names of the professors in each; the titles of the Medical Journals published in this country and in Europe; an alphabetical table of the medicines in use, with their compounds and the doses of each; many prescriptions for particular diseases, and other information of a similar character; is put up in the form of a pocket book, with blank leaves for memoranda. We recommend it to the patronage of the profession.

11. *Liquefaction and Solidification of Carbonic Acid.*—Much interest was excited here some two or three years since, by the annunciation that a French chemist, M. Thillorrier, had succeeded in liquifying and even solidifying, carbonic acid. No description however of the means employed, or of the apparatus used was given. Dr. J. K. Mitchell, with the zeal in the pursuit of science for which he is distinguished, immediately undertook to contrive an apparatus for the purpose, and aided by the suggestions of an intelligent pupil in France, and with the assistance of some friends here, has had one constructed, with which he has obtained solid carbonic acid in considerable quantities and has been enabled successfully to repeat most of the experiments of the French chemist and to revise some and correct other of his results.

“The apparatus consists of a generator of cast iron, A, supported by a wooden stand, B, a receiver, F, also of cast iron, connected to the generator by a brass tube, and fastened firmly to it by the stirrup screw K.—H, I, J, are stop cocks, G the nozzle of a pipe, L a glass level-gauge, and S, M, R, a pressure-gauge.

“The generator is 20 inches long and 6 inches in diameter exteriorly. Its cavity is 16 inches deep, and 3 inches, nearly, in diameter, so that it will hold about 4 pints. The walls are, of course, about 1½ inches in thickness. At the top an aperture of two inches in diameter is closed by a strong wrought-iron screw, the shoulder of which is let in about a quarter of an inch. The collar is of block tin turned to the size of the shoulder of the screw. There is a hole in the head of the screw E for the reception of a long, strong iron bar.

“The copper cup, N, 1½ inches wide, and 9 inches long, holds about 12 fluid ounces. There is a little handle at the top, and a copper wire at the bottom,

which make the whole length a little less than that of the cavity of the generator. This cup is used to introduce the sulphuric acid.

"The brass tube between the generator and receiver is divided into two parts of equal length, which admit of being united by means of a conical juncture, kept tight by the stirrup and screw, K, K. Each of these portions of the tube may be closed or opened at pleasure by a stop-cock. One is placed at I, another at J; so that when the receiver is being separated from the generator, the contents of both may be retained. The stop-cocks in common use are inadequate to resist the pressure, and therefore a screw stop-cock is indispensable. It is made to close a small aperture by means of a conical point, and having a double cone, it closes an outlet also when the cock is completely open, so as to prevent the escape of gas by the sides of the screw.

"The receiver, F, is of the capacity of about a pint. The pipe, G, G, turned at a right angle at G, descends so as almost to touch the bottom of the cavity in F. The stop-cock H, G, is similar to I and J. L. is a glass tube connected at each end to a socket of brass, which communicates with the interior of F. It is the gauge for observing the level of the liquid in T.

"The gauge for measuring the pressure is peculiar. Into a wrought iron box, S, are inserted, by screws, two sockets, T and U. The former descends almost to the bottom of the box, which is nearly filled with mercury. Through the axis of the screw X, a small tube passes into the cavity of S, and is continued to the top of it, so as to rise above the mercury. Two strong barometer tubes, S and M, are cemented* into U and W, and hermetically sealed at the upper ends. These tubes are carefully graduated. In one of them, U, a short cylinder of mercury is made to stand at Y at the commencement of the experiment. The other, socket and all, is full of air, as no mercury is introduced into it. A very fine screw at W, enables the operator to regulate the quantity of air in T.

"The tin cup, O, used to collect the solid acid, is covered by a lid, Z, perforated by a pipe, P, whose top is full of small holes. The handle Q, is hollow, so as to fit the end of the pipe of the receiver at G. To secure the hand of the operator from the cold produced by the experiment, the handle is carefully wrapped up in some kind of cloth.

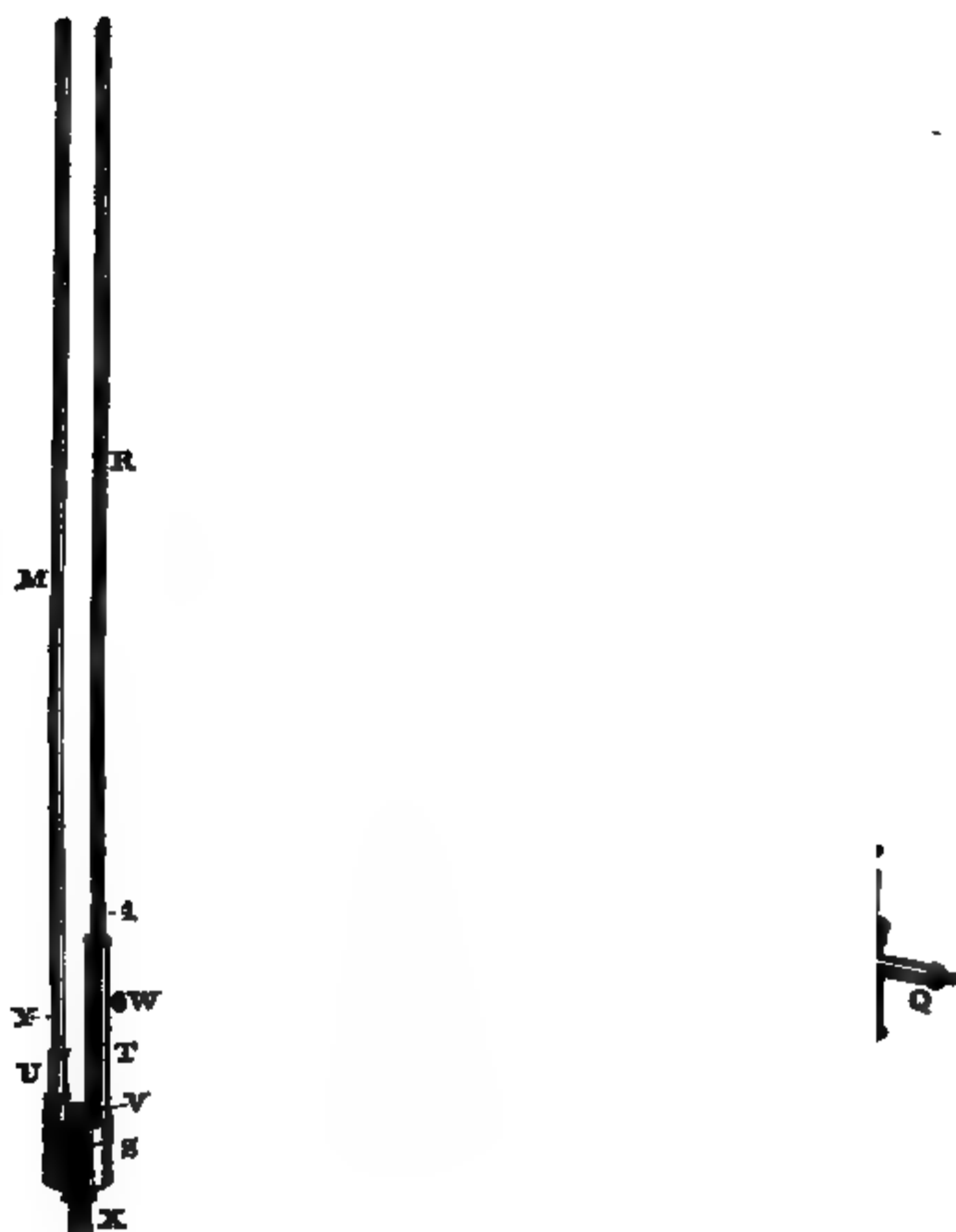
"The apparatus is prepared for use by removing the screw E, and placing 1½ lbs. of bicarbonate of soda in the generator, A, to which 24 fluid ounces of water are to be added. After making these into a thin paste by stirring, nine fluid ounces of common sulphuric acid are to be poured into the copper cup, N, and that is to be let down by a crook of wire into the generator. After the screw E, has been firmly applied, and the stop-cock, J, closed, the contents of the generator are to be brought into admixture by moving it round to a horizontal position on the swivel, D, which is supported by the wooden frame, B, B. There is a check bar at C. This motion is to be repeated several times. In about ten minutes the whole of the carbonic acid is liberated, and exists in A, chiefly in a liquid state.

"The next step in the process is to attach by means of the stirrup and screw, K, K, the receiver, F, *previously cooled by ice*. The keys, I and J, may then be opened slowly, and instantly the liquid carbonic acid is perceptible in the gauge, L. At the end of ten minutes the communication with the generator may be cut off—when about eight fluid ounces of liquid acid at 32° Fahr. will be found in the receiver.

"By letting this liquid into the box, O, through the pipe, G, a large part of it is instantly expanded into gas, which escapes through the tube, P. The coldness consequent on the enormous expansion freezes another part of the liquid,

* The cement used was made of shell lac 3 or 4 parts, white or crude turpentine 1 part, melted at as low a temperature as possible so as not to make bubbles in the mixture. This cement is very strong, but liable, without great care in the regulation of the heat, to have capillary tubes in it from the vaporization of the turpentine. This defect may be completely corrected by cutting away, when cold, the external mass of cement, and putting on a little common cap cement which melts at a much lower temperature and closes the tubes.

which falls to the bottom of O. About one drachm of solid matter is thus formed for each ounce of liquid."



The solid carbonic acid is of a perfect whiteness, and of a soft and spongy texture, very like slightly moistened snow. It evaporates rapidly, becoming thereby colder and colder, but the coldness produced seems steadily to lessen the evaporation, so that the mass may be kept for some time. The greatest cold produced by the solid carbonic acid in the air was— 109° , under an exhausted receiver— 136° , the temperature of the atmosphere being, 86° .

The experiments resulting from the great coldness of the new solid are very

striking. Mercury poured into a mixture of the solid carbonic acid and ether, is frozen in a few seconds. We have seen Dr. Mitchell freeze in this way, nearly a pound of the metal.

"When a piece of solid carbonic acid is pressed against a living animal surface, it drives off the circulating fluids and produces a ghastly white spot. If held for 15 seconds it raises a blister, and if the application be continued for two minutes a deep white depression with an elevated margin is perceived; the part is killed, and a slough is in time the consequence. I have thus produced both blisters and sloughs, by means nearly as prompt as fire, but much less alarming to my patients."—*Journal of the Franklin Institute*, November, 1838.

Forthcoming Work.—S. D. Gross, M. D., Professor of Pathological Anatomy, in the Cincinnati College, has in press, a work on Pathological Anatomy, which he expects will be published early next summer. It will be comprised in one volume octavo, of seven or eight hundred pages, illustrated by six coloured plates, and upwards of one hundred wood cuts. It is to be strictly elementary in its character, and will comprise, first, a summary of the general principles of pathological anatomy; secondly, a description of the normal appearances of each organ and tissue, accompanied by an account of all their lesions. The object of the author is to prepare a work which shall serve not only as a text book for students attending lectures, but also as a work of reference for the practitioner; presenting him with a clear and comprehensive digest of the existing state of the science. The author has spent four years in the preparation of this work, and from his known industry and ability, we may expect his work will prove a valuable contribution to our medical literature.

An Appeal to the People of Pennsylvania on the subject of an Asylum for the Insane Poor of the Commonwealth.—This is a forcible appeal, and we trust that it will be a successful one. We should regret not having any space for extracts from it, had not the necessity for establishments for the insane poor, distinct from those for pay patients been recently insisted upon in this Journal, (See No. for May, 1837,) and had we not reason to believe that the appeal has been extensively circulated.

University of the City of New York.—The Professors in the Medical department of this Institution, have all resigned their chairs. The main causes of this, as appears from their joint letter of resignation, a copy of which is before us, are the protracted delay of the council in adopting a plan of organization, and the determination of this body to levy a tax upon the Medical Faculty.

The following resolution adopted by the council, embodies their *very reasonable* and *modest* demands.

"Resolved, That the rent to be received for the rooms which the medical faculty require, shall be at the rate of one thousand five hundred dollars, for the first year, commencing on the 1st of May next. Two thousand dollars for the second year, provided the number of students be not more than one hundred and fifty, and if over that number, twelve dollars additional for every scholar up to two hundred; (making the sum of \$2600 for 200 students). When the number of students shall be 250 or more, but not 300, the rent to be received shall be three thousand five hundred dollars; and when the number shall be 300 or more, four thousand dollars per annum. All alterations to be made at the expense of the medical faculty, and to be the property of the University. The disposition of the matriculation and graduation fees to be settled by the committee of the medical faculty."*

The Medical faculty have shown merely a just sense of professional dignity, in resisting this flagitious attempt to take from them the rewards of their labours.

* This committee, it appears, is a part of the council, and it is stated that it was subsequently determined by the council that the graduation fees should be applied to founding a Museum and Anatomical Cabinet to become the property of the University.

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MEDICAL COLLEGE

OF THE

STATE OF SOUTH CAROLINA.

THE annual course of Lectures of the Medical College of the State of South Carolina, will commence on the second Monday of November.

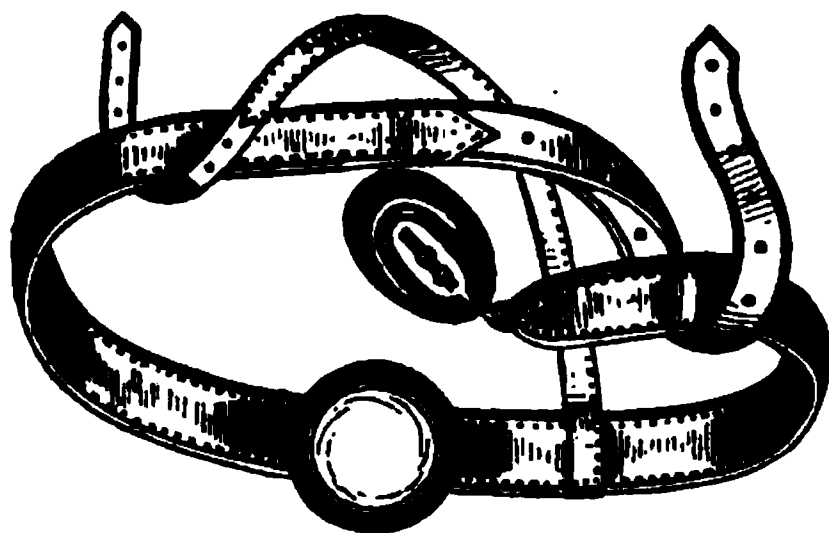
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JOHN WAGNER, M. D.,	<i>Professor of Surgery.</i>
S. HENRY DICKSON, M. D.,	<i>Professor of Institutes and Practice of Medicine.</i>
JAMES MOULTRIE M. D.,	<i>Professor of Physiology.</i>
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C. M. SHEPARD, M. D.,	<i>Professor of Chemistry.</i>
HENRY R. FROST, M. D.,	<i>Professor of Materia Medica.</i>
E. GEDDINGS, M. D.,	} <i>Professor of Pathological Anatomy and Medical Jurisprudence.</i>
F. WURDEMAN, M. D.,	
	<i>Demonstrator of Anatomy.</i>

SAMUEL HENRY DICKSON, M. D.,
Dean of the Faculty.

IMPROVED
SURGEON'S TRUSSES,
FOR THE
RADICAL CURE
OF
HERNIA, OR RUPTURE.

INVENTED BY
HEBER CHASE, M. D.
 OF PHILADELPHIA.

MEMBER OF THE ACADEMY OF NATURAL SCIENCES, AND OF THE FRANKLIN INSTITUTE OF THE STATE OF PENNSYLVANIA; HONORARY MEMBER OF THE PHILADELPHIA MEDICAL SOCIETY, THE NEW HAMPSHIRE STATE MEDICAL SOCIETY, AND OF THE MEDICAL SOCIETY OF AUGUSTA, GEORGIA.



It will be recollected that the Philadelphia Medical Society did, on the 27th day of December, 1834, appoint a committee to investigate the "proposed means of radical cure in hernia."

This subject was taken up by the Society and referred to a select committee of Surgeons, in consequence of the numerous trusses before the public, inviting the attention of the afflicted, some of which *claimed* to effect radical cures in this disease.

This committee, after a patient and laborious attention to the subject for three years, and having had every facility afforded them of seeing the application and testing the merits of all the trusses worthy of notice, have published a report as the result of their labours. This report, which was the result of three years' observation, contains forty-eight octavo pages: it is clear, unpretending, and profound. It appeared in the fortieth number of the American Journal of the Medical Sciences. In their report they say, "all the instruments known prior to the invention of Dr. Chase are defective, and liable to important objections, inasmuch as they do not secure the complete and permanent retention of the bowel, and their action is often attended with serious inconvenience, uneasiness and pain, sometimes producing dilatation of the hernial orifice, and an extension of the evil they are designed to remove. In the expression of this opinion they think they do no injustice to the claims of the other trusses, as they coincide with the testimony of the most distinguished Surgeons in this country and Europe."

"The inventions and improvements of Dr. Chase extend to all parts of the truss and

its appendages, and his attention to minute and highly important details has been carried to an extent never equalled by any of his predecessors in this branch of surgery. There are six distinct instruments employed by him—1st, the Truss for Inguinal Hernia; 2d, a Truss for Vento-Inguinal Hernia; 3d, the Femoral Truss; 4th, the Umbilical Truss; 5th, the Ventral Truss; 6th, the Double Truss." Of these instruments the committee say, "they have effected the permanent and accurate retention of the intestines in every case of Hernia, that have come under their observation, without inconvenience to the patient, and often under trials more severe than are usually ventured on by those who wear other Trusses—trials which would be imprudent with any other apparatus known to the committee. Some patients wearing these instruments, under the inspection of the committee, have followed the most trying labours of the harvest field; others have travelled hundreds of miles on horseback; some have followed the amusements of the chase, leaped fences and dykes, gun in hand; sailors have been enabled to resume their occupation, yet the committee know of no instance of protrusion under these exertions, when the instrument has been properly applied. For the above facts and conclusions, the committee feel justified in recommending, in strong terms, the instruments of Dr. Chase to the confidence of the profession, as the best known means of mechanical retention in all the varieties of Hernia, and as furnishing the highest chances of Radical cure."—*Extract from the Report.*

RETENTION OF HERNIA (RUPTURE) BY TRUSSES—RADICAL CURE.—*Extract from Dr. Reynell Coates's late work on Medicine. (Surgical Department)*—The Truss and its size in retaining the bowel in Hernia, are too well known to require particular description. But the proper construction of trusses has been shamefully neglected, until recently by the profession—being thrown entirely into the hands of instrument makers and pretenders, whose continued changes and improvements, so called, have rendered it difficult to number the modifications. None of the trusses invented before 1834, could be depended upon for retaining the common inguinal hernia completely and permanently. The bowel would occasionally descend in defiance of the care of the patient, and the truss itself become a source of danger by its action on the bowel. Humanity is indebted to Dr. HEBER CHASE, of Philadelphia, for the invention of a complete series of instruments adapted to each variety of hernia, and all the complications of several varieties occurring in the same individual; which instruments, after they are properly adjusted, are capable of retaining the bowel with absolute certainty under all the exertions required, even by laborious professions.

But this is not all; it is found that this certainty and perfection of retention enable the powers of nature to contract the passage, so that after the truss has been worn from nine to eighteen months, the patient generally finds himself *radically cured*. We believe this result will take place in not less than nine tenths of the cases occurring in persons under fifty years of age, and in a fair proportion of cases in later life.

One of the principal operative surgeons of Philadelphia remarks, that the number of cases of strangulated hernia has diminished astonishingly since the introduction of these instruments.—*Boston Medical and Surgical Journal.*

Reference to the following gentlemen is given by special permission.

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Reference respecting these instruments is also made in the Preliminary Report of the Committee of the Philadelphia Medical Society on Hernia, &c., published in the XXXIV No. of this Journal for February, 1836, and also in the Final Report, which appeared in the XL No. of this Journal for August, 1837.

See also "Treatise on the Radical Cure of Hernia by instruments," etc.: J. G. Auner publisher, one vol. 8vo. pp. 195. By Heber Chase, M. D. &c. Also the Final Report of the Committee of the Philadelphia Medical Society, on the Construction of Instruments and their mode of action in the *Radical Cure of Hernia*; (from three years observation) accompanied by a collation of the practical facts contained in the Preliminary Report; with notes, illustrations, and additional cases of Hernia, and diseases resembling Hernia; with a tabular statement of 200 cases of this disease. Also, illustrations of certain instruments designed for the treatment of other diseases affecting similar parts. By Heber Chase, M. D., Member of the Academy of Natural Sciences, Honorary Member of the Philadelphia Medical Society, etc.—One vol. 8vo. pp. 243.

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